INDUSTRY AND FINANCE

(SUPPLEMENTARY VOLUME)

BEING THE RESULTS OF INQUIRIES ARRANGED BY THE SECTION OF ECONOMIC SCIENCE AND STATISTICS OF THE BRITISH ASSOCIATION, DURING THE YEARS 1918 AND 1919.

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PREFACE

THIS book is a supplement to the volume published at the beginning of 1918, and brings the information as to the replacement of men by women in industry, and the chronological account of events connected with currency and banking, up to date.

The Committees appointed just after the beginning of the war are not responsible for these supplementary reports. Miss Grier, of Leeds University, and her band of helpers had continued their work to the summer of 1919. The results of this work were too valuable to remain unpublished, and so the Editor took upon himself the responsibility of recommending that they be printed as an addendum to the volumes already produced. The earlier chapters dealing with the year April, 1917, to April, 1918, were prepared in the summer of 1918, and have been printed as they stood. The final chapter of Section I was added later and brings the information up to April, 1919. Miss Grier writes—

"The report on the replacement of men by women owes much to the skill and energy of investigators in different centres. In Birmingham, inquiries were made by Miss Madeley. In Glasgow, Miss Barrowman continued the researches which she has done so much to advance in other years. Much valuable help was given by Miss Purdon in Leeds. In London, Miss Elliot investigated the engineering, and Miss Laycock the tailoring industry under the able guidance of Miss A. Lawrence. Miss Mahler collected interesting information in Liverpool. Mr. T. S. Ashton, of Sheffield University, sent a very illuminating account of the employment of women in the light and heavy metal trades in Sheffield. To all these, thanks are due.

"Employers, Welfare Supervisors, and Trade Union officials have given valuable assistance to the investigators. Government departments and officials have been most kind in giving answers to inquiries; the Industrial War Inquiries Branch of the Board of Trade, in particular, has been an unfailing source of information."

I have also to acknowledge assistance kindly rendered by Mr. R. E. Barnett, B.Sc., of the Central Technical School, Leeds.

To Mr. A. H. Gibson, of Harrogate, I am indebted for the Notes on "Currency and Banking." It seemed well to continue the chronological account of developments, and Mr. Gibson, when appealed to, very kindly undertook the work.

What is now published is but a fragment, and does not pretend to be anything more. It is the intention of the Economics Section of the British Association to publish the results of the investigations carried out during the war period, in a convenient form at as early a date as possible.

A. W. KIRKALDY.

UNIVERSITY COLLEGE, NOTTINGHAM.
November, 1919.

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INDUSTRY AND FINANCE

(SUPPLEMENTARY VOLUME)

SECTION I

REPLACEMENT OF MEN BY WOMEN IN INDUSTRY

I. General Survey

with Special Reference to the Year April, 1917–April, 1918

A GREAT expansion has taken place in the employment of women during the year 1917–1918. In the occupations enumerated by the Board of Trade (White Paper Cd. 9164), the total number of women employed was reckoned as being 3,276,000 in July, 1914; 4,508,000 in April, 1917; and 4,808,000 in April, 1918. These figures give an increase of 1,532,000 for the period of the war and of 300,000 for the year 1917–1918. (*See* table on next page.)

It will be seen that the groups in this table are arranged according to the persons or authorities by whom the women are employed. Consequently, it gives only a rough classification of occupation: clerks, for instance, are reckoned under each heading, as employers in every group have clerks in their service.

Further, the table takes no account of women in some other occupations. On the one hand, it ignores women in service and in very small dressmaking establishments. The number of women so engaged has been considerably reduced. It is estimated that about 400,000 women have been drawn from these employments into others. On the other hand, several classes of women newly employed are not included. Among these are: (1) Employers and women working on their own account, or left in charge by their husbands and not receiving a wage. Women doctors are excluded if no regular salary is paid to them; (2) voluntary workers, V.A.D. nurses being the only important exception; (3) women in H.M. Forces (Queen Mary's Army Auxiliary Corps and similar services):

	Estimated No. of Females employed in July, 1914.	Females employed, April, 1917.		Females employed, April, 1918.		Number of Women directly replacing men April, 1918.	Percentage of Females to total No. of workpeople.	
		Numbers.	% change since July, 1914.	Numbers.	% change since July, 1914.		July, 1914.	April, 1918.
Industries	2,176,000	2,632,500	+ 21	2,713,000	+ 25	531,000	26	36
Commerce	496,000	803,000	+ 62	850,000	+ 71	352,000	29	53
[1]Services under Local Authorities	198,000	245,000	+ 24	251,000	+ 27	47,000	32	47
Government Establishments	2,000	200,000	+ 9,405	199,000	+ 9,098	187,000	3	44
Hotels, Public Houses, Cinemas, Theatres, etc.	181,000	194,000	+ 7	206,000	+ 14	44,500	49	64
Civil Service, including Post Office	66,000	155,000	+ 135	225,000	+ 241	153,000	2	52
Professions, mainly clerks, except in the case of Hospital workers	50,500	66,000	+ 31	107,500	+ 113	22,500	32	61
Transport, excluding Tramways under Local Authorities	17,000	72,000	+ 325	95,000	+ 459	79,500	2	10
Agriculture in Great Britain, permanent labour	80,000	80,000	–	89,000	+ 11	40,000	9	13
Finance and Banking	9,500	59,500	+ 526	72,500	+ 660	59,500	5	40
TOTAL	3,276,000	4,507,000	+ 38	4,808,000	+ 47	1,516,000	24	37

[1] Including teachers employed by local education authorities; gas, electricity, and water employees, and tramway workers employed by the municipality.

there were about 50,000 of these in April, 1918. If these figures are balanced against each other and the result deducted from the increase of 1,532,000 in the occupations enumerated above, a net increase of 1,200,000 is obtained in the number of women employed since the beginning of the war.

It is estimated from the statements of employers that 1,516,000 women are (April, 1918) directly replacing men. This may include anything that can be placed under the heading of "doing a man's work." Firms which have undertaken much additional work owing to the war may report that women are replacing men merely because they are doing work customarily done by men, although no one was doing this work before women were engaged. Others may report replacement in cases in which it is incomplete, the women undertaking only a portion of the work previously done by men. Employers may or may not include women already on their staff who have moved from processes formerly done by women to others formerly done by men, or women engaged to take the place of men on processes which before the war were performed sometimes by men and sometimes by women.

The distribution of the women newly drawn into the occupations enumerated during the year April, 1917, to April, 1918, has proceeded on much the same lines as that of the earlier years of war, though the increase for the year as compared with former ones has been small in commerce and large among those employed in hotels, cinemas, etc.; and also among those engaged by various local authorities. Moreover, there was a further increase in the number of women employed in agriculture, there being about 113,100 in July, 1918, as compared with 106,100 in July, 1917, and 80,000 in July, 1914.

The increase in the number of women employed during the year under review was considerably less than in 1917, the increase during the year April, 1917, to April, 1918, being only 301,000 as against 651,000 during the year April, 1916, to April, 1917, and rather more than two-thirds of the total increase for the year ending April, 1918, occurred during the first two quarters. During the period October, 1917, to April, 1918, there was an actual decrease in the number of women employed in transport and Government establishments as compared with an increase in the preceding quarter.

Several causes may account for this—

(i) The exhaustion of the supplies of suitable women; such exhaustion may take place partly because so many women have already been drawn into industry and partly because Q.M.A.A.C., the W.R.N.S., etc., have proved attractive to vigorous and patriotic women. These services had absorbed a considerable number by January, 1918; but their greatest recruiting activity has been since that date in the early part of the year, and the extension of such services to the American and Canadian armies must greatly lessen the number of women who can be otherwise employed.

(ii) The return to industry of discharged soldiers.

(iii) The high wages enforced by the Ministry of Munitions.

(iv) The fact that, in some directions, the limit to the possible employment of women has been reached, either because the industry is now almost entirely staffed by women, or because many of the processes are considered unsuitable for them.

(v) The cessation of certain kinds of work in which women were employed.

Instances may be found of these different causes in different industries and localities. The first may be illustrated by a report from one investigator on the women working as tram-conductors in a great city—

"At first they got a very good type of girl—girls who had been in service or at home. They are now getting a much less satisfactory class, which compares unfavourably with the men they used to get."

The difficulty of securing women is frequently commented on, but in large cities it is apt to be spasmodic, as women are from time to time set free by the closing down of some factory or another.

Reports of the employment of discharged soldiers instead of women come from all over the country. Employers welcome their old hands or men who have experience of the trade, and many efforts are being made to train men who have left the Army. Training centres formerly devoted to teaching certain trades to women are now teaching them to discharged soldiers, sometimes to the exclusion of women.

The employers in two engineering works in Leeds stated that the wages enforced by the Ministry of Munitions for women were so high that it was now cheaper to employ boys; when the women left they replaced them by lads, and they were employing fewer women than they had in their works a year ago. Both employers were favourable to women, and spoke enthusiastically of the work done by those who had become skilled; but when the women were doing repetition work only, they thought them "too expensive."

The limit to the possible employment of women is elastic, and varies immensely from place to place according to the opinions and the adventurousness of different employers. In some towns it is thought to have been reached in the tramway service, where women have replaced the conductors almost entirely; in others, as in Doncaster and Glasgow, it is considered possible for them to replace the drivers also. Still, it seems that in many cases women are replacing men to so great an extent that there is no scope for their further employment, although there are no doubt many others in which they could be employed if only the employers could be induced to press replacement further. One employer in an engineering firm in London reported that he was about to close his works because he could not get men, and it was obviously absurd to think of employing women, although the Government was urging him to do so. He listened incredulously when told of instances of women engaged on precisely similar work. He even said that women could not work capstan lathes. So long as such cases are quoted, it is evident that the limit to the possible employment of women has not been reached, since their further employment depends solely on the conversion of the employer. It is difficult to say that it has been reached even in cases in which the only work which women are not doing appears unsuitable for them, since each year they are to be found performing processes which were considered unsuitable the year before. Work that was too heavy is frequently lightened by some labour-saving device; work that was too skilled for workers who had been engaged on it for only a short time is brought within the sphere of women by subdivision of processes, or, more rarely, by the training of the women as skilled workers. But when, as in some private engineering shops, 95 per cent. of the workers are women, the limit of their possible employment has evidently almost, if not quite completely, been reached.

FEMALES EMPLOYED AS PERMANENT WORKPEOPLE IN AGRICULTURE

	July, 1914	July, 1915.		July, 1916.		July, 1917.		July, 1918.	
	Number employed.	Number employed.	Percentage increase or decrease on July, 1914.	Number employed.	Percentage increase or decrease on July, 1914.	Number employed.	Percentage increase or decrease on July, 1914.	Number employed.	Percentage increase or decrease on July, 1914.
England and Wales .	57,000	41,000	-28.1	79,400	+ 39·3	87,100	+ 52·8	90,900	+ 59·4
Scotland .	23,000	21,200	- 7.8	19,300	- 16·1	19,000	- 17·4	22,200	- 3·5
TOTAL .	80,000	62,200	-22·2	98,700	+ 23·4	106,100	+ 37·6	113,100	+ 41·4

FEMALES EMPLOYED AS CASUAL WORKPEOPLE IN AGRICULTURE

Great Britain	50,000	58,000	+16·0	90,000	+ 80·0	88,500	+ 77·0	65,200	+ 30·4

Several reports of the closing of factories during 1917 and the earlier part of 1918 have come in. This has been due to a shortage of material in many cases, but sometimes to a slackening in the demand for a certain type of munitions. The diminution in the number of women employed in Government establishments is largely due to this cause.

The most important exception to the statement that there is a general slackening in the increase in women's employment is to be found in agriculture. In each quarter of the year the number of women employed on the land has been noticeably greater than in the corresponding quarter of the preceding year. Much propaganda work has been done by the County Agricultural Committees, and many women have been drafted into the Women's National Land Army, which was started early in 1917. The efforts made by voluntary organizers and voluntary bodies, as well as by the Board of Agriculture, to recruit women, to train them, and to induce farmers to employ them, have met with much success. Figures up to July, 1918, are given by the Board of Trade in the White Paper already mentioned. (*See* page 6.)

It will be seen that there has been an increase since July, 1914, of 32,000 in the number of permanent women workers on the land, and of 15,200 in those employed casually. During the first year of war there was a serious fall in the number of women regularly engaged in agriculture owing to the demand for female labour in more highly paid spheres of employment. At the same time, however, a large number of the most efficient male workers were drawn from agriculture into the Forces or into pressing industrial work, so that the need for women workers became urgent. By July, 1916, a large body of women had responded to this need, there being a net influx during the year of about 36,000 permanent women workers. During the two years July, 1916, to July, 1918, the rate of increase slackened very considerably, the rise during the period in regular females employed being rather less than half the increase between July, 1915, and July, 1916. The numbers of casual female workers employed was also very much higher in 1916 than before the war but did not rise further the next year, while in the summer of 1918 the number of employed was relatively low owing partly to the bad fruit harvest, and partly to the male labour available, as, for instance, soldiers, schoolboys, and prisoners of war.

Trades.	July, 1914	Jan., 1917.	April, 1917.	July, 1917.	Oct., 1917.	Jan., 1918.	April, 1918.	April, 1918.
	Number employed.	Increase or decrease since July, 1914.	Increase or decrease since July, 1914.	Increase or decrease since July, 1914.	Increase or decrease since July, 1914.	Increase or decrease since July, 1914.	Increase or decrease since July, 1914	No. of Females said to be replacing males.
Metal . . .	169,500	+ 268,000	+ 318,500	+ 358,500	+ 379,500	+ 379,000	+ 385,000	194,000
Chemical . .	40,000	+ 53,000	+ 50,000	+ 52,000	+ 53,000	+ 65,000	+ 63,000	31,000
Textile . .	863,000	+ 22,000	+ 20,000	+ 19,000	+ 9,000	- 2,000	- 19,000	65,000
Clothing . .	612,000	- 42,000	- 46,000	- 41,000	- 44,000	- 44,000	- 37,000	46,000
Food . . .	196,000	+ 33,000	+ 22,000	+ 26,000	+ 28,000	+ 31,500	+ 30,000	62,000
Paper and Printing	147,500	- 7,000	- 8,000	- 6,000	- 5,000	- 7,000	- 4,000	21,000
Wood . . .	44,000	+ 17,000	+ 22,000	+ 26,000	+ 29,000	+ 30,000	+ 34,000	26,000
All Industrial Occupations, including some not specified above .	2,175,500	+ 391,000	+ 446,500	+ 509,500	+ 530,500	+ 533,000	+ 537,000	510,000

The next table shows the changes in the numbers of women employed in various groups of industrial occupations since the beginning of the war, and gives the variations for the different quarters during the year under review. (*See* page 8.)

In industrial occupations there was an increase for the year April, 1917, to April, 1918, of 90,500, but of this number only about 7,000 were recruited during the last half of the year. Nearly three-quarters of the increase for the year occurred in the Metal Trades and in these trades more than half of the net increase took place during the first three months. About the middle of 1917 the Textile Trades became seriously depressed owing to shortage of raw material and during the period July, 1917, to April, 1918, there was a drop of about 38,000 in the number of women employed. Replacement has been numerically greatest in the Metal trades, though it will be noticed that because of the extent of additional work done in these and the Chemical trades, the number of women replacing men does not nearly equal the increase in the number of women employed; whereas in the Textile trades, in which there has been an actual decrease in the number employed, 65,000 women are said to be replacing men: in these trades many women are being employed in the place of men on processes on which men and women were employed indifferently before the war; but there has also been much genuine substitution, the women having undertaken many processes formerly done only by men.

Processes on which Women are Engaged

The extension and direction of substitution in 1917 has been remarkable, rather because of the solidifying of women's position in work for which they had already proved their capacity than by the discovery of new processes on which they can be employed. Miss Anderson, H.M. Principal Lady Inspector, writes in the Annual Report of the Chief Inspector of Factories—

> Although extensions in process work are noticeable now and again, and the substitution reports on non-munition industries from the Inspectors reveal occasionally interesting new experiments, the chief developments of 1917 have been in occupations and types of processes already tried and proved to be successful, and there has been here and there a diminution of unsatisfactory or unfit workers and a quiet dropping off from processes not found practically adaptable for women.

And again—

> The fourth year of the war has for women in factories and workshops been one mainly of settling into the new fields of work which were so rapidly worked out in the three previous years. Far more instances are reported in 1917 than before where women carry out practically the whole of the work of a factory or a branch or process.

In brief, substitution seems to be settling down: successful experiments are being widely imitated, unsuccessful ones are being dropped. One employer in a boot and shoe factory said—

> We have no "freak" substitution here; we have experimented and have now put women on to all processes for which we thought they were fitted; we have taken them off those for which they proved unfit.

The same firm reported that while women had entirely replaced men on the processes in which they did well, discharged soldiers were being employed on those for which women were unsuited.

There are few processes in industry on which women have not been employed and few in which some women have not proved successful; details of the processes on which they are employed will be found under the heading of different trades. But as time goes on, substitution becomes more difficult to trace owing to the necessity of altering and subdividing the processes, not only because of the introduction of female workers who are neither so strong nor so skilled as the men whom they replace, but because of the necessity of "speeding up" in order to secure the required output with a depleted staff. Complete substitution has from the first been rare in engineering; it is becoming less common than it was in other trades. A great subdivision of processes is reported in the tailoring trade in London, and it is largely attributed to the rush of Army contracts, which, quite apart from the introduction of women, rendered advisable any means which would not only do away with the need for skilled workers, but would increase output.

There has been a great expansion in the employment of women in heavy work, and in such work continual readjustments are being made to lighten it. These may be either: (*a*) devices which entail the employment of a larger number of women than men to do a given amount of work; (*b*) devices which enable women to do the same amount of work as men.

(*a*) Under the first heading come the use of lighter trolleys in all works, smaller baskets for carrying cartridges, etc.; thinner lays in cutting in the clothing trade. In some cases, women are

supplied with special machinery to enable them to do work which men could manage with simpler tools.

(*b*) Under the second heading come a mass of inventions for lessening labour, which frequently enable the women to produce a greater output than men in work on which only men were employed before. Of this nature are the introduction of electrical power instead of steam in pressing in the clothing trade; the use of the electric knife in the same trade; the increased use of the magnetic chuck in engineering, so that the work can be held in place with less trouble than before; and so forth.

The distinction between (*a*) and (*b*) is important, because the first means that the women's work is less efficient than that of the men they replace, and more expensive, unless they receive a lower wage; but the second may enable women to be as efficient as men, and bring certain kinds of work hitherto done only by men permanently within women's scope.

In many industries a large proportion of the women newly employed are engaged in labouring, loading, trucking, warehouse, packing, and similar work. For instance, in October, 1917, according to an estimate made by the Board of Trade, 76 per cent. of the women replacing men in the Stove, Grate, and Range trades; 60 per cent. of those in the Glass-bottle trade; 30 per cent. of those in the Ironfounding; 26 per cent. of those in the Brick, Tile, and Fireclay; and 25 per cent. of those in the Rubber trades, were reported as doing this kind of work. The proportion of such work to be done varies from one trade to another, but it is important to note that many women are engaged on it, since it is unskilled, often too heavy for women, and the same output as before can generally only be secured by the employment of more women than men.

While speaking of unskilled work, it is worth while to note that in all industries women are being engaged on clerical work, and in some a large percentage of the fresh women's labour is so employed. To quote the same report of the Board of Trade, 43 per cent. of the women engaged in the agricultural engineering; 25 per cent. of those in the paints, colours, and varnishes; and 28 per cent. of those in the building trades were employed as clerks. Such work may, in some cases, be highly skilled, and many instances are quoted of women undertaking responsible clerical work; but the bulk of it can be undertaken with very little previous experience

or training. Unlike the labouring work referred to above, it is suitable for women, and with a little practice it is found that women can completely replace men in the proportion of one to one. But complete replacement is to be found elsewhere. Women have been establishing themselves in work which has not been altered by the exigencies of the war, and have in numerous instances gone on entirely to replace the men whom they only partially replaced at first. Many cases are quoted in which skilled men were employed for a while to set the tools for the women, but after a time the women have learnt to do it for themselves and no longer need to call on the services of a skilled man. It was much more common in 1918 than it was in 1917 to receive an affirmative answer to the question whether the woman set her tools. Many women are becoming skilled workers and so fully taking the place of skilled men. It is, for example, not possible to state that a woman is a skilled engineer because she acquires complete control of a machine formerly worked by a skilled man, for she may be unable to manage any machine save the one at which she is working, whereas a skilled engineer could manage many different machines. In some works, however, trouble has been taken to move the women from one machine to another; and the increasing employment of women as spare hands is enabling them to replace men as skilled workers, and not only as workers of machines on which skilled men were formerly employed.

Notice should also be taken of the increasing employment of women as charge hands and forewomen. They are not, as a rule, directly replacing men, but have been introduced because of the expansion in certain industries. In the clothing trade in London, it is said that—

> Women have always occupied responsible positions as forewomen and viewers, especially in the women's section of the works. Thus, any increase in the number of women in responsible positions is due rather to expansion than to substitution.

This is true of other industries. When women have for the first time been placed in workshops in which only men were formerly employed, forewomen are often put over them for purposes of discipline, though there are cases in which they are directly responsible for output. There are some instances in which women are really taking the place of men in responsible positions, some as

managers, others as inspectors on the tramways, others as overlookers in worsted spinning mills, etc.; and the movement in favour of putting them in such positions is of interest as showing their capacity for management, whether they are acting as substitutes for men or not.

Success of Replacement

The opinions expressed on women who are replacing men vary so greatly, that it is a temptation to state that the women's success depends on the skill with which suitable women are selected and the type of management under which they are placed. With regard to *output*, that of women is apt to be less than that of men—

(*a*) *Where the work is heavy.* This has already been noticed in connection with labouring work. Thus in soap works, in which most of the work is heavy, on the greater number of new processes three women are employed in the place of two men, or two in the place of one man. In candle-making, three women are employed instead of two men in processes in which men were employed before. In the chemical industries again, the proportion is often 3 to 2 or 2 to 1. In the leather and wood-working trades the proportion is sometimes as great as three or even four to one. A firm in Glasgow reports that in keeping a forge charged, six women are employed in the place of one man.

(*b*) *Where the work is skilled.* This, however, depends on the length of time for which the women have been at the work. In the cutting departments of the clothing trade, two women are frequently employed at first in the place of one man, but as time goes on and they become expert the number diminishes.

(*c*) *Where the hours of work are long.* In the final report of the Health of Munition Workers' Committee on Industrial Health and Efficiency, it is said that "admittedly women and girls are unable to bear the strain of long hours as well as men[1]"; and practical evidence of this inability and its deleterious effect on output is shown by the frequency with which employers arrange for special breaks and rests for the women workers. Such arrangements are so well repaid in some cases as to bring the women's output up to that of the men's even in cases in which the hours are long.

[1] *C.D.* 9065.

Women's output often exceeds that of men—

(*a*) *Where Trade Union restrictions have limited the output of men and do not affect that of the women.* Many reports of this nature come from the engineering trade. One employer told of a woman who turned out 27 units of work a day on a lathe on which she was replacing a man. On coming to work one day, she found a label attached to the lathe, on which was written: "The right output for this lathe is 18." In a firm engaged on aeroplane work in London, it was reported that the output of one woman exceeded that of two men, there being no restriction on it.

(*b*) *When the work is repetitive in character.* Almost all employers speak highly of women engaged on repetition work: they are more conscientious and persistent, and do not get bored with it; consequently their output is greater than that of the men or lads they replace. In the report on engineering from London, it is said that in some cases the increased output of the women on repetition work is more than counterbalanced by the lessened output when fresh contracts oblige the firms to take on new work.

(*c*) *Where special deftness is required.* Some employers report increased output where quickness and neatness of hand is required. In a leather works in Leeds, an employer who said that the women's output was inferior to that of men on every other process noted that it was greater on the glazing machine; he thought this was because, while the work was not heavy, it required swift handling and continuous attention, both of which were more readily given by women than men. Again, in the finishing processes in a boot and shoe works making shoes for small children, the women are said to be everywhere superior to men in painting, polishing, etc.; they handle the children's boots and shoes more deftly than men. The same is reported of women employed on disc-ruling machines in the paper and printing trade; it was said in one firm that was visited that on this process they were much more skilful than men.

With regard to *Time-keeping*, the evidence is of a very conflicting nature. Mr. Alex. Ramsay, in his book on *The Terms of Industrial Peace*, states that women are better time-keepers than men, and this statement is borne out by many employers. On the other hand, many firms report the contrary, some of them stating that the bad time-keeping is the greatest drawback to the employment

of women. As time goes on, it becomes increasingly difficult to obtain satisfactory records, for even where they are kept the comparison is made between women and men at the moment and not between women and the men whom they replace. The best men have gone; and, as in the case of output, a comparison of those who are left with the women yields no satisfactory results. A large engineering firm in Leeds reported a year ago that the women were worse time-keepers than the men; this year the same firm reported that they were much better, because the men employed now are inferior in type to those employed a year ago.

In some cases in which the matter has been carefully gone into, it is said that the men are more unpunctual than women, but that the women actually break time more because of domestic claims, such as sickness (their own or that of their family). Figures bearing out this suggestion were drawn up by an engineering firm in Leeds. The time-keeping records of six men and women were selected at random from the different departments for four weeks in March, 1918, as follows—

TIME LOST, RECKONED IN HOURS, IN THE FOUR WEEKS ENDING MARCH 27TH, 1918

	MEN.					WOMEN.				
WEEK ENDING	MARCH.					MARCH				
Department	*Employee*	6th	13th	20th	27th	*Employee*	6th	13th	20th	27th
C.B Machinists	A		14			A				
	B		13	6	3	B	25	¾	4¾	¾
	C	8	2	2		C	2	3		
	D					D	5½	2½		2½
	E	14	17			E	10½	2½	10	½
	F	53				F	2		¼	
	Time lost ea. week	75	46	8	3	Time lost ea. week	44¾	8¼	15	3½
	Total for mth. 132 Average per employee, 22.					Total for mth., 71¼ Average per employee, 11·9				
Turning . .	*Employee*					*Employee*				
	A	4½	¾	1	4½	A	27¾	12½		¾
	B		¼	6½	11	B	¼		¼	7¾
	C	7	6	4½	10½	C	4¼	4	6½	37¾
	D	1	2¾	4½	1	D	2½	2	¼	4½
	E	2	2		2½	E	¼	2	15	3
	F		2	¼	¼	F	¼	¼		½
	Time lost ea. week	14½	13¾	16¼	29½	Time lost ea. week	35¼	20¾	22	54
	Total for mth., 73¾ Average per employee, 12·3					Total for mth., 132 Average per employee, 22				
Press Operators	*Employee*					*Employee*				
	A	3½	2	½	2½	A				
	B		3	3	13	B	2	1	6	
	C		3			C	9	¼		
	D	15	¼	8½		D	5½	7½		¼
	E		¼		4	E		¼		35½
	F	2½	¼	½	¼	F	1		1½	
	Time lost ea. week	20¾	9	12	19½	Time lost ea. week	17½	9	7½	35¾
	Total for mth , 61¼ Average per employee 10·2					Total for mth., 69¼ Average per employee 11·6				

These records show that the greater part of the lost time among the women was due to some marked cause, since in four cases there was an absence of twenty-five hours or more, only one such absence being noted among the men. If absences of individuals for over twenty hours were deleted on both sides, the women's time-keeping would be infinitely better than that of the men. The figures are of little value except as illustrating what had been observed in the works; and the good time-keeping of the women, apart from their long breaks, is probably due in this particular firm to the exceptionally good management of the Welfare Supervisor, who is entirely responsible for the women's work.

In the Report on Time-keeping drawn up by the Ministry of Munitions, figures are given showing the comparative time-keeping of men and women in a large number of trades. There are few conclusions to be drawn from the tables. Taking all trades together, there seems to be little marked difference between the time-keeping of men and women: men are employed on overtime to a much greater extent than women; and an excess of overtime worked by males as compared with time lost by males is given for the week ending 14th September, 1917, as being 3·3, and for the week ending 25th January, 1918, as being 2·3; while a deficit is remarked in the case of females of 1·8 for the first week and 1·3 for the second.

One interesting point brought out by these records is that the percentage of time lost is greater in the case of males and less in the case of females when a two-break system is in force.

In the matter of time-keeping, it is even more difficult to generalize than in that of output. The causes making for good or bad time-keeping among women as compared with men are numerous and complicated.

1. Much depends on the organization of the women's work. Where women have recently been introduced into a works, the management is often not so strict with them as with its male employees. In an engineering firm in London, the manager complained bitterly of bad time-keeping among the women, but the Welfare Worker said that the firm was "ridiculously soft" with them. On the other hand, in some cases, as in that of the firm for which time-keeping figures were given, the responsibility for the matter has been handed over to especially competent people, with good

results. In firms in which men and women have always been employed so that they are treated more impartially, it is generally said that women are not such good time-keepers as men, because of their domestic duties. But, even here, much depends on the management: one large boot-making firm in Leeds, which has always employed both men and women, stated that there was no more difficulty with women than with men, since absolute punctuality was insisted on with both.

2. Again, a great deal depends on the proportion of married women, or, more strictly, on the proportion of women who have others dependent on their care in case of accident or sickness, and on the number of those so dependent. The proportion of married women employed is, of course, far greater at present than in normal times; consequently it might be expected that general time-keeping records in war-time would compare unfavourably with those of peace-time. Employers frequently report that the married women break time most; but even here there are exceptions. Two employers, one in London and another in Leeds, stated that married women broke time less than unmarried ones, the fact of their families being dependent on them making them more anxious to keep their job.

Finally, much was said by different employers with regard to the qualities shown by women. Little of real value emerges from their remarks on this subject. It is interesting to notice, however, that for the most part employers commend women for being more amenable than men, but complain of their lack of initiative. It is seldom that women are encouraged to show initiative; when they are introduced in large numbers, they are generally wanted for repetition work in which initiative is not required. In other cases in which it would be useful, the manager frequently looks on the employment of women as a temporary expedient, and adapts the work so as to dispense with initiative, instead of trying to develop it. Some employers declare that women display as much of this quality as men if only they are encouraged to show it; but they have been brought up with the idea that it is their business to obey orders, not to make suggestions. It is frequently stated that it is difficult to get women to accept responsibility, and several inquiries were made into this. Some employers stated that it was impossible to find women who had authority over others, and that

it was, therefore, always necessary to employ foremen. As in many industries it has long been customary to employ forewomen, and the employers find they answer much better than foremen, it is evidently not impossible to find women capable of holding such positions; yet there is no doubt that in many firms in which they have recently been introduced, they do not show much authority or responsibility. There is not enough evidence on the point for any general conclusion, but in the few cases inquired into it seemed that where women were promoted from repetition work in a firm to positions of responsibility, they were frequently unsuccessful; whereas if they were selected from outside, or if they had been doing work requiring judgment and thought within the firm, they did well. For instance, in one engineering firm, in which most of the work is repetitive and the labour has been drawn almost entirely from the immediate locality, there has been the greatest difficulty in finding enough women with the qualities requisite for forewomen. Only twelve are employed, but among them there are few who have proved capable. In another engineering firm, situated in a more populous centre and with a greater choice of women, it was said that there had never been the slightest difficulty in finding women who could undertake responsibility: they were largely chosen from outside, but the work inside the firm was made less mechanical for the women than in the other, by moving them from one machine to another, so it was easier to discover if any of the employees of the firm showed themselves fit for such positions.

It is frequently said that women are more conscientious than men, but this is by no means a universal statement. Some employers complain that women, since they look on their work only as an episode, because they expect to give it up when they marry, take it less seriously than men, and are more careless. Here, again, the distinction comes in between women with dependents and those who have none, and the different experience of employers in the matter may largely depend on the proportion of married women whom they employ.

Training

Technical institutes throughout the country continue the work of training women, and in many cases fairly elaborate plant is

being set up for the purpose, considerable Government grants being secured for training in engineering. The head of one such institute writes that the Ministry of Munitions gave their final approval of a scheme for setting up new instructional workshops on 1st January—

> The premises consist of two buildings, one of quite recent erection, each containing three floors, with complete intercommunication. The total floor space is 14,500 sq. ft. In the newer building there is the heavy machine shop, with a large equipment of capstan and turret lathes, grinders and millers, a suite of offices, and a fitting shop on the first floor, with the light machine shop, chiefly occupied by a large number of modern centre lathes as well as an up-to-date tool room on the floor above . . . the Training School is virtually a small but complete model factory. Moreover, it works factory hours and is organized like a productive works.

The course may last from four to twelve weeks and subsistence allowances, varying from 15s. to 25s. a week, are paid to those taking it. Further—

> Arrangements can be made to take employees from a firm carrying out a change of work, so that the girls can be sent into training for the new operations until the firm is ready to employ them again. Sub-contracts can be placed with the school so as to train prospective employees on the identical job for which they will afterwards be required, and this has already been done by some firms in the city.

In these workshops, women are trained on "sheet steel fitting for aeroplane parts, micrometer gauging; and operating various machines required for the production of aero engine components, parts of guns, shell fuses, gaines, etc.; tank mechanism and other munitions." Oxy-acetylene welding is also being taught in another building; and aeroplane woodwork, including propeller-shaping, wing and rib-making and aileron assembling, in a third.

Disabled soldiers, as well as women, are being trained in these buildings, and they receive a subsistence allowance of 30s. a week in addition to their pension. The head of the institute evidently thought that all the buildings used for training in engineering would soon be devoted to the training of soldiers rather than of women. He thought the work more suitable for men, and also that they had the first claim.[1]

Divergent opinions have been expressed about the value of the training given by the various technical institutes. The one

[1] Mr. R. Barnett, Principal, Technical Institute, Leeds.

described above, by arranging the school on the lines of a factory, avoids the objection raised by some employers that women so trained are "unused to factory conditions and are usually discontented with the conditions and hours."

When the women are put on to skilled work, the firm generally prefers to do the training within its own works; but where it is of a repetitive nature, recourse to the technical institute is common. The manager of a large motor works in London writes—

> The instruction the women have received has been at a school, and they are familiar with one or two operations in turning or milling,

and, as the report on engineering in London states, by employing such women, the firms save themselves the trouble of training. The same report continues—

> In the majority of cases, the technical school training is eithe ignored or said to be a nuisance, the foremen much preferring to train the girls themselves. When the question of putting women into more skilled work in the tool room or fitting shop is under consideration, in practically every case girls have been chosen from those already employed to receive special training in the shop.

The same report notes that employers anxious to secure a more educated type of girl, often send to the technical school, because such girls can be found there, and not because of the training they receive. An employer in Leeds remarked that he had sent to the technical institute for a girl for a particular process, not because she would have learnt the process there, but because he wanted a good strong girl. Other instances are noted of the technical institutes being used as a kind of labour exchange.

An interesting experiment was begun in February, 1917, in a great controlled establishment in Scotland. The head of the firm has organized and equipped an engineering factory for training women. The course is to last for three years, and the women are given lectures and theoretical training in addition to their practical work. The work is managed by women, a woman of university education being at the head of it. Since it is intended that the women who leave at the end of three years should be fully skilled engineers, whereas the ordinary training for an engineer lasts for six or seven years, an attempt is made to secure students who have had a good education and possess a knowledge of mechanics. The originator of the scheme is enthusiastic about it, and believes

that there is a great future for women as engineers. The Workshop Superintendent writes—

> Many of our students are doing remarkably good work and really know a great deal more about the theory of it than they themselves realize, as is proved by the answers we get in our six monthly written examinations. . . . We have a few who, if we could spare them, could easily undertake responsible posts even now, but unless an urgent need arises for them, we prefer for their sakes and for ours that they should remain with us at least three years.

Examinations are held from time to time, and the students who pass them successfully are promoted to a higher grade and their wage is increased. They receive 20s. a week when they first arrive; at the end of six weeks they enter for an examination, by which it is decided whether it is worth while for them to continue their training; and if they pass it successfully, they receive 25s. a week. The payment rises gradually to £3 a week in the last year.

By August, 1918, 150 girls were being trained in these works; and the chief question before them is whether when they become skilled engineers, openings will be given them to practise what they have learnt.

Many courses have been instituted by the Ministry of Munitions or encouraged by them for training women in special skilled processes, such as gun-testing. Such courses will probably cease now the war is ended, but they may meanwhile have a great effect in showing the advanced work of which women are capable.

Training for women as direct substitutes for men outside the place in which they work is for the most part confined to engineering and agriculture, these being the two occupations in which it has seemed most necessary to obtain fresh supplies of labour. In other occupations, the training has generally taken place within the factory or workshop, and, as has been noted, this has often been preferred in engineering, even when opportunities for outside training occurred. There are some other attempts at such training, however. The training of women for the boot and shoe industry at Leeds has been suspended, as has been already noted, in favour of training discharged soldiers; but classes in "clicking" have been arranged by the Northampton Education Committee, and a number of women have been qualified for work in the clicking department.

In some cities, definite training is being given by the municipal

authorities where women are replacing men in municipal services. In Glasgow, women are trained as switchboard attendants in electric power stations, and as tram drivers. In Liverpool and Manchester, there being a shortage of trained workers, women are being trained for gardening in the public parks and for similar occupations.

This training of women by municipal authorities for municipal services is on much the same lines as the training of workers by any other employer. Such training is common. But in many instances the employer has no wish to train the women. He may have entered into an agreement to replace the women by men as soon as men are available; he may be working under pressure so great that it is impossible for him to devote any time to the training of unskilled workers; he may believe, and in some cases he is right, that the work is unsuitable for women. For any of these reasons he may not think it worth while to train women, but may prefer to subdivide the work, or keep the women on one process instead of moving them to another when they have mastered one. In the clothing trade. for instance, the employers have signed an agreement that—

> As soon as is practicable after the conclusion of the war they will revert to the conditions prevailing in their respective factories and workshops before the war in regard to men's employment.

Employers in the clothing trade quote this agreement as a reason for keeping women on one process only, and it is no doubt responsible for a remark made in the report on the trade in London that " the majority of employers seem to prefer to keep the women unskilled, and there is not much special training given." But even where such agreements exist, much depends on the individual employer. Wherever women have replaced men in the boot and shoe industry, there are similar agreements, yet several employers have been found to take the greatest interest in training women in skilled processes. In engineering, the undertaking on the part of the Government that men shall be reinstated has not hindered many employers from training their female workers, and many of them speak with pride of their success in doing so. When this is the case, the training is generally given to very few women, and often in works in which the proportion of women to men is small. But it is sometimes attempted on a larger scale. In a firm in

Leeds, definite training within the works is given to acetylene welders and annealers. The same firm has a course of from three to six months' duration for oil can-makers, the girls being taught to fit and solder the whole of the oil can; the department for training girls in this way is constantly being enlarged. In engineering, however, there is a strong impression that, in spite of any undertaking made by the Government, the women have come to stay; and there is, therefore, a stronger incentive to the employers to train them. A sense of the impermanence of women workers because of their giving up their work when they marry has always been detrimental to their training, and when employers believe that agreements to replace women by men at the end of the war will take effect their sense of impermanence is deepened.

Women and Trade Unions

Perhaps the most noteworthy change relating to the position of women in industry since the issue of last year's report is to be found in the growing numbers and enthusiasm of women in trade unions. It is estimated by the Fabian Research Department that there were 465,000 women trade unionists at the end of 1916 and 690,000 in the spring of 1918, an increase of 47 per cent. in a period of little over a year. The great activities of the women's union during the last eighteen months and the number of favourable awards secured are largely responsible for this increase in membership. This increase has been most noticeable in the great general unions which have for the most part been organizing women in the engineering trades: the membership of the National Federation of Women Workers is now[1] 50,000, and the National Union of General Workers has acquired 15,000 new female members during the past year. But there has been a startling increase in the numbers enrolled in industrial unions. The United Garment Workers' Union has 50,000 women members now, an increase of 30,000 on the numbers of a year ago; the Amalgamated Society of Tailors and Tailoresses has trebled its female membership; and the General Union of Textile Workers has added at least 20,000 women to its numbers, more than trebling its membership. Instances of the same kind can easily be multiplied.

It is still said that women are unstable trade unionists, and are apt to drift in and out of the unions according as they do or do

[1] September, 1918.

not expect to gain any immediate advantage from them. But the spirit of the trade union officials is much more hopeful than it was a year ago; they feel that the women have begun to recognize the value of organization.

Among the many unions which admit women, it is rare to find any which confine their membership to skilled workers. But a special craft union for women only was organized by them two years ago: the Society of Women Welders. In one year the membership grew from 50 to 500, and by September, 1918, 630 women had joined it. This Society has consistently put forward two principles—

1. That all welding is, or should be, fully skilled work.
2. That the rate of pay should be the same for men and women.

It declares that no test can be made which will separate skilled from unskilled work in welding, and that, therefore, after a given probationary period all welders should, given that they have proved efficient, be reckoned as skilled, and that they should receive the full skilled rate. The Society has received much support from the Amalgamated Society of Engineers, and its history will be worth following as that of a Society at present unique in forming a skilled union for women.

In addition to the movements noted, there has been a decided increase in the number of women holding responsible posts in trade union organization in societies which have a mixed membership. This has been specially recorded by officials in the National Union of General Workers and by the Postal and Telegraph Clerks' Association.

The massing of women together in numbers hitherto unknown; the spirit of independence following on the higher wages paid to them in the industries they have recently entered and, consequently, in turn, in which they were formerly employed; the closer contact forced upon them by their new work with men who are accustomed to rely on their unions to maintain their positions in industry, are beginning to have the influence that might be expected in developing women's interest in trade unionism and greatly increasing the membership of the different societies.

Conditions of Women's Work

Little need be added to what was reported last year on the subject of Welfare Supervision. Better conditions throughout are

the result of the insistence of Government departments on a certain level of decency and comfort. Miss Anderson, in the Report of the Chief Inspector of Factories, remarks on the "new demand for improved conditions in women's older occupations"—

> It is (she writes) not only in controlled and national factories that material advance has been made. The whole spirit of management has quickly changed in many factories and industries where no new welfare order runs and where State control of profits has not entered. New attempts are found to reduce hours as well as to introduce forewomen and specialized supervisors for women's labour, production, canteen, and welfare; carefully adjusted seats and benches; automatic delivery of material where practicable; cloak rooms and rest rooms. Even introduction of methods of fatigue measurement to secure future progress has been found in a Scottish factory.

In some of the larger munition factories, the arrangements for the health and comfort of the workers are little short of magnificent. In one which in the spring of 1917 had no welfare arrangements, and which was visited in the spring of 1918, there were found to be not only adequate and excellent ambulance and rest-rooms, and a good canteen, but a large dancing room. Canteens have sprung up as if by magic, and much thought is put into the provision of suitable and sustaining food. Other firms not working for the Government, and not under Government control, emulate these arrangements.

A few points may be noted as having become matters of special attention in 1917—

1. The question of hours, referred to by Miss Anderson in the passage quoted above. For some time the relation between length of hours and fatigue, and between length of hours and output, has been the object of investigation by certain scientists and by those responsible for the management of a few exceptional firms. It is now becoming a matter of special attention within many firms. In two firms in Yorkshire visited within a few days of each other, it was found that the supervisors had been collecting facts on the subject, the one with a view to convincing the employer that certain long hours reduced the output of girls under 18; the other to prove that in a shop run on the eight-hour shift, output was greater, time-keeping better, and the time which the girls remained with the firm longer than in the shops which were on twelve-hour shifts.

2. The question of pre-natal welfare is being seriously considered. This has naturally arisen in view of the numbers of

married women now employed especially in munition works. Arrangements have been reported by which women who are about to become mothers are, if they choose, put on to especially light work, in the last month or two with sewing work only, and are provided with milk and good meals, in addition to a minimum time-wage. For five months before their confinement they are not allowed to work at night. Such arrangements are rare, and the end of the war and a return to normal conditions may make them unnecessary, but so long as married women are employed, they are important.

3. Welfare outside the factory, or city welfare, providing for good means of transit, for lodging or hostel accommodation, for clubs and recreation rooms, is also developing. Extra-mural welfare officers have been appointed by the Ministry of Munitions to work in various centres, and the movements which they are helping to inaugurate should permanently make factory life less difficult for women.

4. The Association of Welfare Workers formed in August, 1917, has a membership of many hundred workers. The members bear witness to the widespread efforts to improve factory conditions. The Association is vigorous. It insists on the need for fully-trained and qualified workers, and is trying to solve the problem of the relations between employers, welfare workers, and trade unions.

Sources of Female Labour

Inquiries have been made into—

1. The proportion of married women employed.
2. The previous occupations of women recently engaged.
3. The extent to which women have been brought into a neighbourhood for factory work.

The answer to all these questions varies with the locality. Few accurate returns have been received, and those that are given are merely illustrative of certain tendencies and cannot be taken as authoritative evidence.

1. The proportion of married women employed is everywhere on the increase. It is greatest in firms in which no women have been employed before; where they have always been employed, those replacing men are often taken from among the former employees who did not consist of married women to any great extent.

Some firms give a definite preference to soldiers' wives; many give it to the wives of their employees.

Married women have been introduced into firms in which only single women were employed before, to do work formerly done by women as well as that usually done by men. Two firms which, as a matter of principle, had always declined to employ married women, report that they have been obliged to engage some because of the shortage of labour.

As time goes on, the proportion of married women increases. It is found to be higher in firms which have added largely to the numbers of their women employees in the last twelve months than in those in which the numbers have been stationary or declining.

In four engineering firms in Leeds, employing altogether 3,463 women, 1,530 (*i.e.*, 44 per cent.) are married. All of these women have been introduced since the beginning of the war; but in one in which only 36 per cent. are married, the numbers have declined by 32 per cent. during the last year, and in another in which 55 per cent. are married, the numbers have gone up by 54 per cent. These proportions are high for Leeds, as it is not customary for married women to be employed in industry. According to the Census of 1911, only 15 per cent. of the occupied women were married.

A firm in Coventry reports that at the beginning of the war almost all the girls engaged were single; now they are chiefly soldiers' wives.

Throughout the country a proportion of from 40–60 per cent. of married women among those newly employed is common. In one engineering firm in London, as many as 90 per cent. of the women are married. Reports from Liverpool relating to a number of miscellaneous trades gives the proportion as being as low as 5 or 6 per cent. in some cases, or state that very few married women are employed; but a munition works giving preference to soldiers' wives, states that 70 per cent. of the 1,400 women engaged since the beginning of the war are married. In Glasgow, the proportion of married women employed is low as compared with other great centres. Only one firm giving information on the subject had as many as 60 per cent. of its women married; several report that not more than 20 and 30 per cent. are married.

2. Figures published by the Board of Trade, giving an analysis of pre-war occupations of women and girls to whom unemployment books were issued under the National Insurance (Part II) (Munition Workers) Act, 1916, are given below. They only relate to a period up to 13th January, 1917; but give indications of tendencies which are likely to continue, and are the only authoritative information which can be secured for any large number of women.

These figures show that the largest number of recruits come from household duties and those formerly unoccupied, a section which comprises married women and girls who have only just left school, and therefore gives little clue to the number who may wish to remain in the new occupations. Domestic service furnishes large numbers also. It will be seen that the clothing trades, while giving 39,793 recruits to others, only received 33,122 from them.

PRE-WAR OCCUPATIONS

1. Numbers

Present Occupation.	Same Occupation.	Household Duties and previously unoccupied	Textile Trades.	Clothing Trades.	Other Industries.	Domestic Service.	Other non-industrial Occupations.	Total stated and classified.
Metal Trade	53,249	18,927	3,408	4,635	12,458	12,502	5,449	110,628
Chemical ,,	14,634	52,407	6,226	17,941	20,879	44,438	17,079	173,609
Textile ,,	6,378	4,730	1,377	3,695	2,320	2,531	1,054	22,085
Clothing ,,	38,256	9,334	1,000	8,430	5,745	4,970	3,643	71,778
Wood ,,	4,439	3,764	783	1,490	2,626	3,950	1,196	18,248
Leather ,,	7,682	2,179	695	1,372	1,782	1,311	822	15,843
Rubber ,,	7,879	4,055	1,119	1,561	2,104	2,393	1,030	20,158
Other ,,	4,003	3,115	400	669	1,233	1,897	875	12,192
Total	136,538	98,511	15,008	39,793	49,147	73,992	31,148	444,137

2. Percentage Drawn From Each Occupation.

30·7	22·2	3·4	9·0	11·1	16·6	7·0	

That a large proportion of the women newly engaged come from household duties and those previously unoccupied, and from domestic service, seems to be borne out by accounts from many different places. But the extent to which they are drawn from other industries naturally varies considerably with the main industries of any particular locality. And in places in which few domestic servants have been employed, the proportion drawn from among them is correspondingly small.

In old-established firms in which few alterations had been made, most of the women come from other factories, unless they are the wives of former employees.

In Leeds, an engineering firm employing over 500 women gives the following figures relating to the pre-war occupations of its workers—

At home and previously unoccupied		28%
Mill-hands (Textile)		28%
Tailoring 14% / Boot & Shoe 2%	Total Clothing	16%
Domestic Service		14%
Printing Trade		6%
Tobacco Trade		3%
Other Occupations		5%

It is reported from London that in the firms visited in which women were newly employed in the engineering trade, the source from which the women were drawn varied according to the type of firm. In new, up-to-date shops, the girls were largely drawn from the technical schools; most of them had not been in factories at all before, and many had been unoccupied.

Another firm employing over 2,000 women, and also engaged on engineering work in Leeds, reports that the women employed who were not previously unoccupied were weavers, tailoresses, or domestic servants; the order in which they are mentioned coincides with that given for the first firm. This firm also notes that 50 per cent. of the women have been employed in the same works for over two years. It will be noted that in Leeds, situated in the midst of a great textile district, and itself the centre of a great clothing industry, the percentage of women drawn from the textile and clothing industries tends to be high as compared with the general list given above; and that domestic service is not nearly so important a recruiting ground as it is in other districts, the proportion of women so employed in Leeds having always been small. According to the Census of 1911, 22 per cent. of the occupied women in Leeds were engaged in the tailoring and 13 per cent. in the textile trades, only 11 per cent. being in indoor domestic service, the corresponding figures for the country as a whole being 2 per cent. in the tailoring, 13 per cent. in the textile trades, and 26 per cent. in indoor domestic service. The large proportion of women in Leeds formerly engaged in the textile industry is due not to its prevalence in Leeds, but in the surrounding districts, whence a number of female workers come into Leeds by tram. The industrial region round Leeds is almost entirely devoted to the production of woollen and worsted goods.

In industries other than engineering in Leeds, women who are replacing men are largely drawn from other branches of the same trade. In the tailoring trade, women who are put in the cutting department are generally selected from the machinists; in the woollen trade the women put on to new processes are taken from old ones. A worsted spinning firm reports that all the women engaged as overlookers had been machine-minders in the same department; in the printing trade, again, the women are shifted from one process to another. The only industry in which women have been formerly employed in large numbers, in which this does not hold good, appears to be the boot and shoe trade, though it is more general there than it was a year ago.

In Liverpool the variety of industries from which women are drawn appears to be very great. The proportion of women engaged in paid occupations in Liverpool was low before the war compared with that of other large cities, being 247 per 1,000 as compared with 324 for England and Wales as a whole, 381 for London, and 371 for Leeds. Further, it had no preponderating occupation for women except indoor domestic service, in which 21 per cent. of its occupied women were engaged, 12 per cent. more being engaged in other forms of domestic work. Consequently, while the women employed on new work were often previously unoccupied or in service, the occupations from which they are otherwise drawn are amazingly varied. A report was sent of the former occupations of twenty women placed by the S. and S.F.A., which, though it does not relate to women replacing men, is characteristic of those who do. Five had been unoccupied, 3 had been in service; the remaining 12 had been: 1 in a tobacco factory, 1 in a showroom, 1 in a gas works, 1 in a biscuit, another in a firelighter factory; 1 in a confectioner's shop, 1 had been a tent-maker, another a box-maker, 2 had worked in flour mills, and the others in " factories " —the precise nature of the work not being specified. As might be expected, firms reporting on this point, if they do not say that the women replacing men were unoccupied or soldiers' wives, or in domestic service, merely state that they are " factory girls." One shipbuilding firm which was employing women in the timber yard, said the women employed were of the " bag and basket-making type." Of those replacing men on lighter work, it was said that they came from " every source," from " every grade of

society"; and one munition works employing 1,400 women, and referring to those employed on the lighter kinds of work, said that many were dressmakers and shop girls, and some domestic servants. Both this firm, and an oil and seed-crushing firm in Liverpool, reported adversely on domestic servants, saying they were undisciplined and did not stay long; on the other hand, in a flour mill in which ninety women, most of them drawn from domestic service, had been engaged since the beginning of the war, the work was said to be satisfactory.

In Glasgow, the only other city from which any information on this subject was obtained, it is reported that many of the women were previously unemployed. A boot and shoe factory employing 290 women (only 128 having been employed before the war) states that the majority of women newly engaged had no occupation before the war. An iron and steel works reports that 25 per cent. of the 300 or 400 women newly engaged were formerly unemployed; one engineering firm employing 412 women states that 21·6 per cent. were unoccupied; and another employing 77 women that, in 1915, 50 per cent. were unoccupied, but that the women engaged now have generally shifted from other work. Of the women previously occupied, many come from domestic service; others have been weavers, machinists, tailoresses, shop-girls, and waitresses.

3. In most of the districts investigated, the labour was drawn from the locality; this might be expected in large industrial districts where much local labour is available. Imported labour is necessarily employed when great works are erected in unpopulated districts; it is often employed in comparatively small centres which have suddenly become of great industrial importance because of war demands, or which are situated close to greater centres of industry which have drained their available resources. For instance, it was found that two great worsted spinning mills in a small town close to Leeds were relying largely on imported labour; the girls, many of them very young, were in lodgings or in two hostels taken for the purpose of accommodating them. There had for a long time been a difficulty in getting a sufficiently large supply of local labour, and the war had increased it. Several of the girls came from Ireland.

In Coventry, most of the labour newly employed is imported. The immense expansion of munition work created a demand for

many more workers than could be drawn from the neighbourhood, and has had to be satisfied from outside.

In Glasgow, a certain amount of labour has been imported. A dye works employing 400 women reports that the bulk come from outside; and an iron and steel works employing between 300 and 400 workers states that 20 per cent. are imported from Ireland. But the other firms investigated in Glasgow, and all those in London, Liverpool, Birmingham, and Leeds, drew their workers from the immediate neighbourhood (*i.e.*, from within the reach of the tramway system).

II. Engineering and Metal Trades

Extent and Nature of Substitution

The replacement of men by women in engineering is increasingly difficult to trace, because of (1) the large amount of additional work undertaken owing to the war demand; (2) the continual readjustment of processes and progress of dilution. In large munition works it is often impossible to calculate the amount of substitution; it has been proved in such works (*a*) that it is possible to run them with a large percentage of female employees; (*b*) that it is possible to employ women on processes which had formerly been undertaken only by the trained male engineer; but it cannot be shown that individual women are replacing individual men, because either the work was not done at all or not done on anything like so large a scale before the war.

In smaller works, where the character of the industry has not been greatly changed, substitution is more direct and more nearly complete. Women are to be found taking the place of men on work done by men before the war. In many cases, such work is highly skilled; there has been no alteration of processes, and the skilled workman who was in attendance in earlier days to set the tools, etc., is now often dispensed with, the woman undertaking the whole of the responsibility for her machine. Even in such cases, however, it must be noted that the woman is not as fully equipped or so valuable to the employer as the man she replaces, since, being without his training, she cannot be put on to a fresh machine without having to learn something that is new to her. In short, women frequently replace skilled men directly and completely on particular processes, but they have not at present had time or opportunity to acquire the training which would enable them fully to replace skilled engineers. Consequently, during the war, there has been a tendency towards standardization, not only in munition works where the great demand has naturally given rise to it, but also in other engineering works, when lack of adaptability on the part of the semi-skilled workers (both male and female) has forced the firm to produce a standardized article instead of a variety of goods.

In July, 1914, it is estimated that 9 per cent. of the workpeople engaged in the engineering and metal trades were women; in April, 1918, 23 per cent. were women. The total number of women engaged in these trades increased from 170,000 in July, 1914, to 555,000 in April, 1918; the number of men employed increased during the same period from 1,634,000 to 1,849,000.

In London it is estimated that the total number of women employed in the metal and engineering trades increased from 18,000 in July, 1914, to roughly 57,000 in April, 1918; the number of men employed having increased from about 122,000 to 130,000. It will be seen that the proportion of females to total employees has increased from about 13 per cent. to about 30 per cent. It may be noted that out of the increase of 47,000 in the total numbers employed 39,000 (or 83 per cent.) are women. This illustrates the very great extent to which women have been taken on for additional rather than for substitutional work.

A more detailed investigation of eleven firms was carried out in London; only three of these employed women before the war, and these employed only thirty between them; over 9,000 women are now employed, the proportion of female to total employees being as high as 76 per cent. in a general engineering works and 66 per cent. in a motor works.

In few cases was the substitution of women for men found to be direct or complete, though there were instances of women directly replacing boys or apprentices. For the most part, the women were replacing semi-skilled men and doing repetition work.

(A) *Processes in Light Work.* On light work the most general processes on which women were found were: Rough boring, parting off, drilling, gauge-turning, milling, tapping, filing, assembling, screwing, pressing, etc. In this work, women have completely taken the place of semi-skilled men in firms in which "scientific management" was far advanced before the introduction of women; in other firms, the employment of women has drawn the attention of the employers to scientific methods, and the general engineer has been replaced by one or two highly skilled men and an army of semi-skilled workers. The introduction of women has hastened and extended the use of methods which were being increasingly employed before the war; it has led to—

(1) *Standardization of Products.* For example, it was stated in a

large motor works that "ten types of car have been reduced to one, otherwise so much substitution would have been impossible."

(2) *Perfection of Machinery.* The use of jigs and "fool-proof" machinery has been greatly increased. This accompanies standardization and is part of

(3) *Simplification of Process.* The most satisfactory report on the use of women's labour came from a firm employing 5,000 women on fuses and nothing else, so that an immense simplification of processes had been possible.

(B) *Processes in Heavy Work.* The same developments were found in heavy work, chiefly in two shell factories where women make 6-in. shells, turning out 59-lb. shells quite efficiently in one case. Women in such factories do every part of the work, including the heavy boring; but a man "lifter" is employed.

Two-thirds of the firms written to, engaged on heavy work, replied that "no substitution had taken place owing to the heavy nature of the work."

(C) *Substitution in General Engineering.* Where contracts are of a constantly varying nature, no readjustment of process can make up for the loss of the skilled engineer. Standardization is impossible unless the firm changes its character. Almost without exception, firms of general engineers replied: "No women are employed here, as general turners only are of any use."

In one of these firms, however, the manager admitted that he was employing discharged soldiers on light jobs, although it was four months before they were of any use to him; in another it was said that it was rather the small number of employees (50 men) which rendered the necessary change unprofitable than the actual nature of the work. The position was summarized by the manager of a "General Engineering Works" in the S.E. district—

> Our works are much too small to be of any use to you. . . . One of the officials of the Ministry of Munitions came to the conclusion that as our work is of such a varying and general nature, it would be useless to try and substitute women. . . . No doubt girl labour would be suitable, provided the girls were apprenticed to the trade and spent some time learning it.

One or two cases of general work done entirely by women were met with, notably that of a "general welder" to a shop containing 470 employees; her work included cast-iron repairs.

Sheffield

In Sheffield it has always been customary to employ a large number of women in the metal trades. According to the Census of 1911, 18 per cent. of the occupied women were working in these trades, which employed a larger number of women than any other occupation, except that of domestic service.

For the purpose of the inquiry, it was found convenient to consider the typical industries of Sheffield in two main groups, the heavier and the lighter metal trades respectively The first of these includes the iron and steel, the engineering, and the munitions industries; and in this group in which the normal business is a large joint stock concern, integration of processes has been carried to such an extent as to render separate treatment of the associated industries practically impossible: the typical firm is concerned with two or three distinct industries. In the second group of lighter metal trades are included firms manufacturing cutlery, edge tools, files, and silver and white metal ware; and here again, although the representative business is small, the boundaries of the firm often cut across those of the industry, and it is not always possible to determine what number of workers in a firm belong to a particular industry.

In Table " A," compiled from the Census, is shown the distribution of labour, male and female, between these two groups in 1911.

1. The Heavy Metal Trades

Before the war, the employment of women in the iron, steel, engineering, and munitions industries in the Sheffield area was negligible: according to the figures in Table " A," the proportion of men to women was 219 : 1. The next table (Table " B ") indicates the change wrought by war conditions in this respect. It is based on returns obtained for the purpose of this inquiry from ten firms of varying sizes, but all, it is believed, typical of this group of trades. In order to ascertain the value of the sample, the firms were asked to state the approximate numbers of men and women employed by them immediately before the outbreak of war, as well as the corresponding numbers for June, 1918. (*See* tables on the following page.)

Since the industries in this group in Sheffield employed less than

TABLE "A"

NUMBERS EMPLOYED IN SHEFFIELD IN CERTAIN METAL TRADES, ACCORDING TO THE CENSUS, 1911

Occupation.	*Numbers occupied.*	
	Male.	Female.
Iron, Steel, etc. Manufacture	20,158	25
General Engineering and Machine Making	13,439	128
Electrical Apparatus	976	5
Total for "Heavy" Group	34,573	158
Tool Makers	4,485	372
File Makers	3,651	1,190
Saw Makers	1,243	202
Cutters; Scissors Makers	12,049	2,692
Wire Drawers, Makers, Workers, Weavers	1,222	51
White Metal, Plated-ware Manfrs., Pewterers	5,546	4,201
Precious Metals, Jewels, Watches, Instruments, and Games	1,037	363
Others	2,577	369
Total for "Light" Group	31,810	9,440
TOTAL FOR ALL METAL INDUSTRIES	66,383	9,598

TABLE "B"

TEN FIRMS.	Males.	Females.	TOTAL.
Number of workers employed, 1914	23,540	97	23,637
" " " June, 1918	37,603	4,388	41,991

35,000 workers in 1911, and probably not many more in the early part of 1914, it is clear that the ten firms represented a substantial proportion of the workers; and the figures may be safely taken as an indication of the effect of the war upon the heavy industries of the city. During the four years, the labour power of the ten firms has increased by 78 per cent.; and whereas in 1914 the proportion of men to women was 243 : 1, in 1918 it was less than 9 : 1. Of the 4,388 women employed in 1918, 3,096 were, according to the firms, directly replacing men. It should, however, be stated that 3,620 of the women were employed by three large munitions firms alone, and the men replaced had themselves been dilutees

Processes. There is probably no important type of war gear, offensive or defensive, that is not made in Sheffield, and it is probable that there is no form of munition manufacture that women do not now adorn. The majority are, of course, engaged on shell work ; and it is worthy of note that they have gradually advanced from the lighter to the heavier shell which in the early stages of the war was worked by men. In this evolution the women have been greatly assisted by the growing differentiation of processes, and by the introduction of auxiliary machinery, such as pneumatic hoists. A recent innovation at one works has been the employment of women on the shell press, a process which demands exceptional strength and skill under conditions of temperature which one would imagine to be quite unsuited to women. Women and girls are also engaged in munition works as crane drivers, core makers, armature-winders, fitters, brick-dressers, labourers, electric sub-station attendants, as well as in offices, stores, canteens, and lavatories.

In the steel industry, women are returned as employed in steel sorting, value examining, turning defects from blooms, as bricklayers' labourers, as foundry labourers, and as window-cleaners; but the general impression given by employers is that most of the work is too heavy for women, and that there are rigid limits to the possibility of substitution in the industry. Three firms concerned only with the manufacture of steel, employed between them, before the war, 3,958 men and no women; in June, 1918, the same firms found employment for 6,195 men and 147 women. Another well-known firm of steel-makers, in reply to the inquiry, stated that no women were employed in their works. It is evident that the expansion of the industry necessitated by the war has been carried out almost entirely by male labour, and that women are used only for subsidiary and almost incidental services.

In no case in this group of industries were women found taking the place of managers or foremen, although in certain works they are employed as charge-hands: an official of one works which had experimented with forewomen, gave it as his opinion that " women are useless except under male supervision; women will not be 'bossed' by other women."

It may be said, on the whole, that a considerable influx of women has taken place into the many trades of Sheffield; but of direct

substitution of men by women in processes carried on before the war, there is little evidence, and only a very small proportion of the women now employed can be regarded as skilled workers.

2. The Lighter Metal Trades

In this group, inquiries were made into the cutlery industry in the wider sense, including the manufacture of knives, forks, razors, scissors, scythes, files, saws, and edge-tools, as well as into the silver trades (which also include workers in Britannia metal, nickel silver, pewter, etc.).

According to the Census, there were engaged in this group, 31,810 men and 9,440 women in 1911, or 3·4 men to every woman employed. Detailed returns similar to those presented for the heavy trades in Table "B" were obtained from ten representative firms in the lighter trades. A summary of these is presented in Table "C"—

TABLE "C"

Ten Firms.	Males.	Females.	Total.
Number of workers employed, 1914 .	4,325	1,504	5,829
" " " June 1918	2,211	1,277	3,488

In Table "B" relating to the heavy trades, the most striking feature was the expansion, equivalent to 78 per cent. in the number of employees; in Table "C," on the other hand, there is exhibited a contraction of approximately 40 per cent. It should, however, be observed that Table "C" gives a far less satisfactory sample of the group than Table "B." This was inevitable owing to the nature of the economic organization of the industry. In the heavier group, a few large firms employ the great majority of the workers: in the cutlery trade, the typical size of business is small, and not more than 65 per cent. of the workers are employed in factories of any size. The remainder carry on their trade as "little masters," usually renting power and employing a few helpers, or as out-workers in small workshops without power. It is difficult to speak with assurance of the conditions prevailing in an industry where concentration is so limited; but it is believed

that the figures in Table "C," relating as they do to the larger businesses, are representative of the industry generally.

The shrinkage in the *personnel* of the trades here considered is due, in the main, not to a fall in demand for the goods produced, but to the drain of the Army and the superior attractions of the well-paid munition works in Sheffield. For our present purpose, however, the point of interest is that, whereas a contraction of 49 per cent. of the male employees took place during the war, the corresponding percentage contraction for women was only 15. In the ten firms there were, in 1914, 2·9 men to every woman; in June, 1918, the proportion was only 1·7 : 1. Notwithstanding this fact, there is again little evidence of direct substitution of men by women in the trades under consideration: only about 100 of the 1,277 women and girls recorded in Table "C" were returned as having taken the place of men workers.

Processes. In the cutlery industry there are three principal groups of workers: forgers, grinders, and cutters or hafters. As far as can be ascertained, no women are engaged in forging; hand-grinding is also almost entirely confined to men, but the introduction of machine grinding, particularly of razors and forks, within recent years has provided employment for an increasing number of women. But it is in the hafting and later processes that the bulk of the women are engaged, though even here the type of work done is strictly bounded by trade union rules and also, perhaps, by the conservatism of employers. Women are employed in buffing and glazing table-blades and forks, and in the preparation of materials for the male hafter. In these processes they are employed either by a little master in a tenement factory or by a male team-master in a larger works; but in both cases, whether in the table- or spring-knife trade, the actual hafting or putting together of the parts is done by men.

One recent development resulting from the war, merits special attention. The demand of the troops for cutlery has greatly extended the production of solid-handled knives and forks, which are stamped out from blanks in one piece, and which accordingly do not go through the ordinary processes of hafting. Before the war, this type of cutlery was produced on a small scale for cheaper commercial purposes; but at the time of writing there were, approximately, 500 women and girls engaged on its manufacture for use

in the Army. When they come from the forge, the knives and forks have to be dressed or buffed with emery in order to remove the scale of iron-oxide with which they are coated. The process is somewhat dirty, but a far more serious matter is the high incidence of lung troubles due to the constant inhaling by the girls of the particles of emery and iron-oxide in the atmosphere. Many of the workers and union officials hold strong views on this matter: the greater speed of production and cheapness of manufacture are, no doubt, important considerations at the present time, but the price paid in human lives seems a high one; and unless preventive measures can be taken against the spread of the disease, common humanity would demand that the production of this ware should cease when peace returns.

Another development which has extended somewhat the field of women's work has resulted from the introduction of the now well-known "stainless" or "rustless" steel. The blades made from this material are ground not by hand but by machine, and the grinding is largely done by women.

In the file-making industry, women take no part in forging or grinding, apparently; but the cutting of the lighter files, whether by hand or machine, has long been carried out by women; and the later process of dressing or sand-blasting the file has always been regarded as women's work. File-making is a very widely dispersed industry,[1] and it has not been possible to obtain definite information; but the extent of substitution is probably small.

In the silver and allied trades before the war, approximately 5,000 men and 5,000 women were employed. In July, 1918, according to figures supplied by the President of the Master Silversmiths' Association, the number of men was 2,380 and of women 1,741. The contraction is no doubt due mainly to the attractive force of the munition industries, and it is interesting to notice that a somewhat higher proportion of women than of men have left the trade during the course of the war: according to the Census figures the proportion of men to women was 1·3 : 1 in 1911; in July, 1918, it was 1·4 : 1. Evidently there has been little, if any, substitution in this industry. The main processes on which women are engaged are buffing, burnishing, and lighter subsidiary work.

[1] There were in 1900 no fewer than 546 little shops where hand file-cutting was carried on in Sheffield. *Vide* Lloyd, *The Cutlery Trades*, p. 200, foot-note.

In no case, except in the silver trade, were women found acting as foremen. Here, as in the cutlery manufactures, it is customary for women to work in teams; and the head of a team is often a woman.

It appears that in the lighter trades in Sheffield, although the war has altered the proportions of male and female labour in the cutlery trade, it has had no such effect in the silver trades; and even in the cutlery trade there has not been any extensive direct substitution of men by women. On the other hand, the introduction of new products like the stainless steel cutlery, and the solid-handled ware, has greatly extended processes on which women were engaged in small numbers before the war; and in the hafting of both table- and spring-knives, the preparatory processes have largely been taken over by women. The war has substituted a demand for large numbers of articles of a few standard designs in place of the more varied demands of pre-war days; and this standardization of product is strengthening the tendency—weakly operative before the war—towards machine methods and factory production. It is in the larger factories and on machine processes that women are most extensively employed, and indirect substitution has thus taken place to a considerable extent. That substitution, both direct and indirect, is not more general is probably due to the conservatism of both employers and workers, and to the opposition of many of the craft unions. If the war had continued much longer, the further call for men might have broken down this opposition and forced an extended use of women's labour upon the industry; for, whereas it is improbable that women will ever engage in forging and grinding—other than machine-grinding of lighter goods—there would appear to be no reason, apart from present lack of training, why they should not take a greater share in the making-up and hafting of pen- and pocket-knives in particular, instead of, as at present, merely assisting men. Similarly in the silver trades, where women are now doing little beyond buffing and burnishing, it ought not to be impossible for their operations to extend to such processes as chasing, engraving, and mounting.

As the lighter industries of Sheffield suffer metamorphosis from the domestic system to the factory system of industry, it appears probable that they will absorb women workers in increasing numbers. That metamorphosis has been taking place slowly and

painfully for many years, but in this, as in other spheres, the war has speeded progress. It appears probable that new fields of activity, far more suited to the constitution of women than are the steel and allied industries, will be opened up after the war in the reconstituted cutlery and silver trades.

LEEDS

In Leeds, the total numbers of women employed in the metal and chemical trades are estimated to be as follows—

TABLE "A"

WOMEN EMPLOYED IN METAL AND CHEMICAL TRADES IN LEEDS

	July, 1914.	Jan., 1918.	Apr., 1918.
Number of Women employed in—			
(*a*) Private Firms	3,500	10,900	9,400
(*b*) National Shell, Projectile, and Filling Factories . . .	None	11,700	10,400
TOTALS	3,500	22,600	19,800

It will be noted that from January to April there was a decided decrease in the number of women employed. This was largely due to the decline in chemical rather than metal works. At the same time, inquiries showed that in several engineering works the number of women employed had been reduced. In some cases this was due to an alteration in the nature of the work done—for example, a firm which a year ago had been employing 100 women in the making of copper bands, had given up the work which was foreign to it and had reverted to locomotive-making, work on which the men strongly objected to the employment of women. In other cases, the numbers of women had been diminished because of the wages insisted on by the Ministry of Munitions; two employers said it had become more economical to employ boys.

In several of the works visited, the employment of women had not varied since the preceding year. In one factory in which this was the case, the manager said frankly that the women were only taken on to satisfy the Ministry of Munitions and to enable the firm to employ more men.

There is little to add to the report published last year with regard to women engaged in engineering. A special effort was

made to find instances of women engaged as charge hands or forewomen, and of women doing especially heavy or highly skilled work. The following facts were elicited—

1. In several firms, attempts have been made to employ forewomen. But these women are not generally acting as substitutes, as they are employed in shops in which no women were working before, and the work is new. In one works employing over 500 women and girls, three forewomen are employed; in another larger factory, twelve forewomen have been engaged: but in neither case had any women been employed before the war.

2. A good many attempts have been made during the last twelve months to put women on to work formerly considered too heavy or unsuitable for them; *e.g.*, in one firm employing 3,794 workers, of whom over 2,000 are women, it was noted that since May, 1917, 258 women had been newly employed as labourers and 34 as furnace tenders. In several firms it was reported that women were now being employed as crane operators, special clothing being designed and supplied for the purpose.

Several instances were found of adaptation of plant to make it possible for the women to manage the heavy work. In the works quoted above, in which women are now doing labouring work and tending furnaces, the boxes in which the cartridge cases are placed have been made smaller, so that women can lift them; those that the men handle contain 7,000, while the boxes lifted by the women hold only 5,000. Further, the furnaces which the women tend have been specially built, so that they can be managed by women. In another works, various devices had been resorted to, to enable the women to do heavy machine-work; for instance, a woman working a spade-cutting machine had been supplied with a special arrangement for getting the shell-head away from the machine, the hammer and chisel formerly used by a male worker for the purpose being too heavy for her.

3. An increasing number of women have undertaken skilled work, though the numbers are still small. The chief "skilled" occupations on which they are engaged are tool-setting and tool-making, acetylene welding, and various processes in brass work. One firm of engine and tool-makers was visited, in which there is no repetition work, and where a small number of women have been taken on among about 300 men. They are employed for the most

part on work generally done by boys; but, even so, each worker produces goods of different sizes and shapes from the machine she controls. The women are employed as follows—

One on a power-sawing machine; she sharpens her own blades, though a man does the heavier part of the work.

Three on turret-lathes, using a variety of tools on them and setting their own tools, except when such tools were introduced for the first time.

One on a universal milling machine, the work being both heavy and varied.

One on a milling machine, cutting bevelled edges; three sets of special angles are given her, and she sets the machine, which is a complex one with many different controls.

One on a horizontal grinding machine, cutting knife-edges of many different sizes, the knife-edges being required for testing machines (for weighing pressure and measuring the breaking strength of iron). The reputation of the firm largely depends on its knife-edges. A magnetic chuck is used to hold them in place, and accuracy to half a thousandth of an inch is required.

One on a circular grinding machine, turning out goods of many shapes and sizes.

One in charge of both a screwing and cutting machine, and passing from one to the other.

One on a machine for placing ball-bearings of many different sizes.

One on a slot-drilling machine, which she sets up entirely by herself.

Such a firm in which all the women are doing non-repetitive work, in some instances of a highly skilled nature, is exceptional. As a rule, the proportion of women engaged on skilled work is small, though there are signs that it is increasing.

In a firm mentioned above, which employs over 2,000 women, there are now three skilled women tool-setters and fourteen skilled women employed in the electric shop, though there were none a year ago. In another firm, in which attempts have been made for some time to put women on to highly skilled work, two women are employed on universal grinding machines and doing work to the two ten-thousandth part of an inch. Two other women on milling machines in the same firm were reported as doing skilled

work, since they take their work straight from the foremen, do their own indexing, and set up the tools.

Much time is required for women to acquire skill and to overcome the prejudice against their doing skilled work. Several firms report that women are not allowed to set their own tools. Meanwhile, where women have been employed in large numbers, the readjustment of processes has gone on apace, as in the works of an engine company an extreme case of dilution was found where formerly skilled men only had been employed. Before the war, 100 per cent. of the workers were skilled; now 60 per cent. are unskilled, the number of workers has increased by 25 per cent., and the output by 100 per cent. No attempt has been made to train the women.

There has, in short, been a race between the adaptation of machinery to the use of unskilled workers and the adaptation of the unskilled worker to the handling of machinery which requires skill. It has been found easier on a large scale to change the work so that skill is dispensed with, rather than to make the women so skilled that the work need not be changed. But in some few cases, where it has not been possible or desirable to make the work repetitive, women, if they have been taken on at all, have become skilled. This happens on a small scale only. Further, throughout the industry a large proportion of the skilled jobs which remain after the work has been made as repetitive as possible have been taken on by women.

Birmingham

In Birmingham, women have always been largely engaged in the metal trades, which employed a larger percentage of the occupied women than any other group of industries; indeed, according to the Census of 1911, 26 per cent. of the occupied women in Birmingham were employed in the metal trades; and only 17 per cent. in forms of domestic service, both outdoor and indoor. It is estimated that before the war, 30 per cent. of the total number of workpeople engaged in these trades were women, as compared with 9 per cent. throughout the country. During the first three years of the war, the total numbers of women employed increased from 48,000 to 95,000, and of men from 110,000 to 130,000.

The greater part of the expansion in the metal trades in Birmingham is due to the growth of large firms engaged on munition works; the general metal trades of the city were, for the most part, carried on in pre-war days in small firms; a large proportion of these smaller firms have not taken up war-work, and the numbers of workers engaged in them have diminished, the male workers having been reduced in numbers, the female workers remaining much as before. All the expansion in the metal trades has been in controlled firms; and the numbers of women employed have increased chiefly in the small arms, in engineering, and in cycle and motor works. That is, the great increase in the employment of women has coincided with an increase in the employment of men; and, as is so generally true throughout the metal trades, the new work which the women are doing is additional and not substitutional. In some instances, however, the number of women employed has been increasing, while that of men has been diminishing; notably in the carriage and wagon trade, where women have undertaken a good deal of heavy labouring work; in electrical engineering; and in the making of nails, bedsteads, and hardware.

A few works of a varying nature were visited in Birmingham with the idea of discovering any special cases of women taking men's places in skilled and responsible work.

Firm A.—Pen factory. In this firm about 2,000 women and from 100 to 150 men were employed before the war. The numbers have now contracted, and only 700 women and less than 100 men are employed. Since the war, women have been employed: (1) On the power press, where they frequently set their own tools: though Firm A had not previously employed women on these presses, they had been so employed elsewhere; (2) on tool-setting: three women have been trained for this work; (3) in the mill, measuring steel; (4) on pickling in the electro-plate department: this work is unskilled, and the women have a man over them.

Firm B.—Railway carriage works. Three hundred women have been substituted for men in the old departments. (The factory was in 1918 making aeroplane shells and shell wagons, and employed many women in such work.) Of the 300 women in the old departments, two-thirds were doing repetition work; but one-third were engaged on skilled work, generally taking the place of improvers,

but in some cases taking the place of highly skilled men. It was stated that selected women could work on a screw-cutting lathe after five or six weeks' experience, whereas men require a lengthy period of training.

It was said emphatically by this firm that no processes had been changed for the women, and that in purchasing new plant the fact that women would have to work it was not taken into account.

Firm C.—Electro-plating factory. Employing 40–60 workers. Women replaced men in two departments: (1) Lathe polishing: this work was only new to women in Firm C: they were frequently employed on it elsewhere; (2) making-up, shaping, and soldering wires: this work was new to women in the trade, and is considered skilled.

In this firm, which was sold in August, 1917, the senior partner was a woman, who took charge of the factory on the outbreak of war. She had previously been in the business and had managed the works until her son was old enough to undertake the management. When he enlisted, she took over the commercial side of the business as well as her own work.

Firm D.—Polishing and gilding factory. Employing about twenty workers. One girl is replacing a man on gilding. The manager is a woman who took over the control when her brother volunteered. Before that time she had been a clerk in another firm. She now manages the business, including the accounts and the shop, except when she is able to keep a forewomen.

In three firms of small manufacturing jewellers, mention is made of women managing the concern. But the number of workers employed is very small.

LIVERPOOL

The replacement of men by women in Liverpool has not progressed so rapidly as in some other cities. There appears to be strong trade union prejudice against it, and a very small number of women had been employed in the metal trades before the war. The superintendent of a large engine works along the docks, whose work consisted chiefly of ship-repairing, complained bitterly of the men's attitude; he said—

> We are terribly short-handed and we know we could get women to do the work well; but we are handicapped by the tyranny of the Union.

On the other hand, the director of another engineering works, who complained of the shortage of labour, said it would be possible to get over the men's opposition, but that the great difficulty lay in the necessity of a five years' apprenticeship for the more skilled work.

For one reason and another, women are doing no skilled work in engineering in Liverpool except in munition works; and, it may be noted that, in the only munition works of which any account was given, all the women were working under skilled foremen and men charge hands. No women act as forewomen or managers, though there are some women supervisors.

Glasgow

The replacement of men by women in Glasgow has proceeded on much the same lines as have been illustrated by the reports of other years. Inquiries were made into substitution in 14 firms, including two engaged in shipbuilding. Of 11 firms giving particulars, 8 had employed no women at all before the war; the proportion of women now employed varies from 3 to 6 per cent. of the total employees. It is noticeable that, in one firm engaged on heavy work in which the total number of employees has increased since the beginning of the war from 491 to 3,197, the proportion of women to men has diminished—

	Before the War.	May, 1918.	Increase %.
Men	415	2,862	575%
Women	76	335	340%
Total	491	3,197	551%
Proportion of Women	16%	10%	

No other instance of this kind has been found throughout the inquiry. In such a case, the women's labour is obviously an addition to labour employed before, and cannot be reckoned as taking the place of men's.

The report is exceptional in that only one firm out of eight giving information on the subject, states that new processes have been introduced because of the employment of women, but even in that instance there has been no alteration in product. One

other firm mentions that new processes have been adopted because of the new class of war output demanded, but not as a consequence of women's work.

With regard to responsible positions, an engineering firm reported that six women were replacing foremen, and in a shell-factory one woman is replacing a foreman and another foreman has been replaced by two women acting together. No other cases of women replacing foremen were noted, though one firm stated that there were forewomen in charge of women, but the work was new and it was not a case of replacement.

Several cases are quoted of women doing exceptionally heavy work. In the shell factory already mentioned, the weight of the shells handled in the day of $9\frac{3}{4}$ hours varied from $1\frac{3}{4}$ tons to 9 tons, the weight of each shell being 45 lb. The greater number of the women employed appear to be doing unskilled and labouring work, but some cases are mentioned of their being trained and engaged on highly skilled processes.

Success of Substitution as Regards Output, Time-keeping, and Quality

The success of the women engaged in engineering depends largely on: (1) the heaviness of the work; (2) the skill required. Time is an important factor with regard to both, since the development of the necessary muscles, and the learning of the "knack" in lifting and handling, counts for much in heavy work, and both training and practice are essential where skill is needed. Still, on heavy work, women's output continues, as a rule, to be less than that of men. On skilled work, it is frequently greater at a particular process; but if the work is often changed, the loss of time involved in the training for a new process counteracts the greater output achieved when it is learnt. Much depends in skilled work on the trouble taken by the firm in training the women.

On repetition work, when it is not too heavy, the output of the women frequently exceeds that of the men. This is partly due no doubt to the lack of trade union restrictions, but also to the fact that women do not seem to get impatient when doing monotonous work as quickly as men do; further, some employers noted, women are still so unused to the high wages they can make on piece-work, that they are apt to overwork themselves in order to secure them.

With regard to time-keeping, the reports continue to be contradictory. The remarks in the general part of the report are applicable, except that a larger proportion of the women engaged in engineering are married than of those engaged in other occupations. This is because of the great extent to which additional labour has been employed. As far as the quality of the work done is concerned, many managers noted with satisfaction the great accuracy of the women's work.

London

Output.—In London, the opinions of the employers as to the success of the women with regard to output were found to vary as the work fell under the head of :

(1) Light work, which is again subdivided into—

(*a*) Pure repetition work without variation of output;

(*b*) Pure repetition work with variation of output;

(*c*) General work of a varied nature;

and

(2) Heavy work, the women either being employed in groups with men doing part of the work, or directly taking the place of men.

In (1) (*a*), the general verdict was that the women's output exceeded that of the men or boys whom they replaced; but as direct and complete substitution was rare, comparative figures of output could not be obtained. In an aeroplane works in which girls were directly replacing boys, it was said that the girls' output "might be slightly less than the boys, but was much more consistent." In a more up-to-date firm in the N.-W. district engaged in the same kind of work, it was emphatically stated that the output was much greater than that of the boys, and this view was endorsed by nine other similar firms. The need for careful supervision was emphasized in several cases, because it was said that, without it, output was much lessened by the fact that the girls were apt to go on working after their tools had given out and so turned out scrap. In (1) (*b*) the favourable verdict was a good deal modified by the fact that the time and trouble taken in teaching the girls new work is not counterbalanced by their greater output when they have learnt it.

In (1) (*c*), when the women had been properly trained, the firms

were very well satisfied and maintained that the women's output was equal to that of the men's, but such cases were rare. In (2), the output of the women was said to be equal to about 75 per cent. of that of the men. The work seen was chiefly heavy boring of shells. Two firms visited, emphasized the need for short hours if any output was to be got from the women at all; one of them employed women in three shifts of 7½ hours, and the others in three shifts of 7 hours. It was said that the substitution of the short shifts was the only satisfactory plan with women engaged on heavy work.

Time-keeping.—With regard to time-keeping, opinions varied greatly. In almost all the cases in which the women's time-keeping was said to be better than that of the men, it was expressly stated that a better class of girls was employed; the girls were said to be doing the work from patriotic motives and were, therefore, " more amenable."

The employment of women with children was given sometimes as a cause for good and sometimes for bad time-keeping; in one firm in which it was said that, on the average, women were worse time-keepers than men, it was added that women with large families kept better time than men, the employer concluding that, " unless forced by necessity, women were worse time-keepers than men " ; in another firm employing 3,000 women, the welfare supervisor stated that the women's time-keeping was good except in the case of married women with children, who were apt to be kept away by the children's illness in epidemics. This was so much the case, that in the view-room, where good time-keeping was essential, no married women were employed.

The general reasons given for good time-keeping were—

1. Necessity.
2. Good welfare arrangements.
3. Patriotic motives.

Little effort appeared to be made to counteract bad time-keeping, which was accepted as inevitable when it occurred. It was commonly said that only women supervisors could cope with the difficulty.

Quality of Work.—The unanimous verdict as to the quality of the women's work was that it was well up to the average: in several cases it was said to be " more conscientious, especially on

piecework." To attain this result, most employers thought it necessary to have careful supervision and to use more "fool-proof" machinery.

Foremen continually complained of lack of initiative on the part of the girls, without doing anything to develop the quality. No such complaint was made in cases in which the women's labour was looked on as permanent and care was taken to interest the girls in the work, as, for instance, in a shell shop employing 470 workpeople, of whom 170 were women, where the girls were being urged to stay at the work and to go to night schools and do the necessary mathematics in connection with it. Such cases are rare; the usual conclusion is that "girls are not such good mechanics as boys and not nearly so responsible." The fact that the foremen do not, as a rule, take the trouble to initiate the girls into the work, because they look on their employment as a temporary expedient, accounts for the general ignorance of the women as to the work they are doing and the tools which they are using.

Sheffield

A report on the success of the women's work in Sheffield runs on much the same lines. It is said that the output of the women in the shell-shops and other munition works is apparently satisfactory and compares well with that of men; partly at least because no fears of reaction on the standard of life or the regularity of employment have existed to give birth to a "ca' canny" policy. It should, however, be remembered that tools, machines, etc., used by the women are repaired and kept efficient by men, and that without such aid and supervision the output could not possibly be maintained. In the iron and steel works, in the few cases in which comparison can be made, women appear to be distinctly inferior to men in output, though the quality of the work done is generally said to be as good as that of men. One firm which employs women as tracers in the drawing office, declares that the output is superior to that of men.

As regards time-keeping and regularity of work, experience varies; but the majority of employers speak well of women in this respect. The larger munitions firms, however, find them inferior to men in regularity. Many munition girls, apparently, are not solely dependent on their own earnings, and are willing often to

lose time at work rather than forego amusements and entertainments. In other cases, absence from work must be due to far more serious causes: many married women workers leave their children in charge of neighbours who are unable to work, and if at any time the neighbour fails, the mother must remain at home. In one instance which came under personal observation in the course of this inquiry, an old woman who made a comfortable living by tending the children of four families while the mothers were at work, decided that now at length she could afford a holiday at the seaside—with the result that four married women were away from work for a week. Similar occurrences must be common.

Leeds

Output.—Of 12 firms in Leeds reporting on the success of the women, three reported that the output had been increased since women had been introduced, but in one case the increase was due entirely to dilution and the adaptation of processes. In the two other cases, the output of women on particular machines was directly compared with that of men and found to be greater; in one it was said that the " women gave points to the men everywhere ": it was evident that in this firm the type of man employed was not good. In two more firms, it was said that the women's work was good or very good ; in another that the women were as good as unskilled men, but that there was no complete substitution, as the women had only been given the unskilled part of the work to do, except in the case of a woman storekeeper, who was a great success. In another firm the women's output was said to be satisfactory. In the remaining six, the opinions given were less favourable ; in one it was frankly said that the women's work was very expensive, that they were not nearly as good as men, and were quite unskilled : in this case a small number of women were employed among a considerable number of men, no special supervision arrangements were made, and the firm seemed to accept the idea that women could not be expected to be as good as men as an established fact and to consider their employment as a temporary expedient to be treated with good-natured tolerance; no attempt was made to train them or give them an interest in their work. In another, three women were employed in the place of two men on heavy work. In another case the

women's output was said to be fair. In two others it was spoken of as less than that of men, but it was noted that the women had not had time to show good results: in one case because there was little repetition work, in the other because the women had not had time to acquire technical skill.

In this last case, a foremen wrote of one part of the works as follows—

> Prior to the war we employed 22 men and 22 boys in the assembling of oilcans, lamps, etc., on piece work. Now we have 7 men and 7 boys and 24 girls. The men and boys are still on piece work, but the girls are on day work only. They work on a different principle from the men and boys as they are being taught to do both men's and boys' work. In this they are making good progress and are turning out very neat work. They are making very clever solderers, but have not yet quite mastered all the technical points in the assembling of an oilcan or lamp, and until they do so, of course, their output on an average is much smaller than the men and boys. But the quickness they show in learning these points shows that before long they will be masters of the job and then their output will jump very quickly.

On the whole, it might be said that, given good supervision, the output of women on repetition work of not too heavy a nature was superior to that of men. Most employers leave the matter there and do not attempt to employ women on more skilled work. But when trouble is taken to train the women, the output on skilled work is generally good; and several employers who were interested in the matter thought that their output would equal if not exceed that of men if they spent as much time in learning the work.

Time-keeping.—Opinions as to time-keeping were equally divided. Home-claims were given as the reason for bad time-keeping in cases in which the women's time-keeping was said to be worse than that of the men. Two firms said that the women's time-keeping as compared with that of men was better than it had been a year go, but this appeared to be due rather to the fact that the men had deteriorated than that the women had improved.

Quality.—Opinions as to the quality of the women's work were generally favourable. In several firms their superior accuracy in fine work and in the use of the micrometer was commented on. In one works it was noted that women working on the universal grinding machine did not scrap any work, although they were working to the limit of two ten-thousandths of an inch.

One firm employing over 500 women on a variety of processes summarized its opinions as follows—

> Generally speaking the women concentrate more and are more conscientious about their work than men, but the men understand the technical part of the work better than the majority of women and so make fewer mistakes. All things considered, the quality of the women's work is neither superior nor inferior to that of men.

Glasgow

Output.—Of nine firms reporting on the subject from Glasgow, three stated that the women's output was very good, the others spoke of it with less enthusiasm; one stated that the women's output was half that of men's, and another that there were many cases of restriction of work on the part of women. This is the only firm which has mentioned such restrictions, except to say that women's work is not subject to them.

Time-keeping.—With regard to time-keeping, six of the firms stated that it was good, or very good, one adding that there was no broken time among women for avoidable causes. Another stated that the women had at first kept better time than men, but were deteriorating; another that the women's time-keeping was "not bad," and another that it was very indifferent. Opinions as to women's time-keeping seemed, on the whole, to be exceptionally favourable.

Wages

Owing to the intervention of the Ministry of Munitions on wage questions, the dilution of labour in engineering shops, and the consequent lack of complete substitution, it is difficult to secure tables of comparative wages which are of any value.

A good many facts as to the actual wages paid to women have been collected from different places and, in some few instances, comparisons have been made. But, as a rule, little has been done beyond the giving of some idea as to the amount that women have been able to earn during the war.

London

This is illustrated by the table given on the next page of the twelve firms visited in London, which, for the most part, leave the high wages earned by men to the imagination.

There are two main points which emerge from a consideration of the wages: First, that on light work, one of the main reasons for employers preferring female labour is that it is cheaper; second that with one exception, those firms which have the most highly-developed welfare arrangements, pay the lowest wages.

In no case was it stated that women were earning as much as the men; but generally in London the processes were newly introduced since the war.

WAGES AND HOURS OBTAINING IN THE FIRMS VISITED LONDON

FROM APRIL TO JUNE, 1918

	HOURS.	WAGES—WOMEN.	MEN.
Light Engineering Fuses, Grenades, Aeroplane Work etc., etc.			
FIRM No. 1 .	Two 10 hour shifts	Time rate, 28s. to 32s. Straight piece rate £3 10s.	Boys apprenticed, 12s. £4
„ „ 2[1].	Two 12 hour shifts	Flat time rate beginning at regulation bonus, rising according to ability to £2	
„ „ 3 .	Two 10 hour shifts	Time rate minimum + piece rate, 38s. day work; 45s. night work	A.S.E. rates
„ „ 4 .	10 hour day reduced from 12 hours owing to bad effect of long hours on efficiency	Time rate 6d. per hour + 20% behaviour bonus. Piece rates on some jobs	
„ „ 5 . small work	12 hour day efficiency	Time rate 6d. per hour + piece rate. One girl who "works like the devil," earns £4 10s.	
Firm No. 6 .	Two 12 hour shifts	Minimum time rate 27s. Piece rate if on job long enough. Girls say rarely exceeds minimum	
„ „ 7 .	12 hour day	Flat time rate, average £2	
„ „ 8 .	53 hour week	Time rate: 15 years 2½d., rising by ½d. to 18 years 5d.	
„ „ 9 .	12½ hour day	Time rate 4½d.+ 1½d. behaviour bonus = 6d.+ piece rate bonus fixed after 4 weeks	
„ „ 10 .	9½ hour day	Time rate 6½d. to 7½d.+ 10% time-keeping bonus+7s. bonus. Average wage for shop of 100 boys and 550 men and women, £3 10s. to £4. Some men £7 piece rate	
Heavy Work Shells, etc.			
Firm No. 11 .	Three 7 hour shifts (1) 7–9.30 | 10–12.30 | 1–3 (2) 3–5.30 | 6– 8.30 | 9–11 (3)11–1.30 | 2–4.30 | 5–7	Time rate (money made up to equal 10 hour shift money)+ output bonus + time-keeping bonus	
„ „ 12 .	Three 7½ hour shifts (1) 6.30–10.30 | 11– 2.30 (2) 2.30– 6.30 | 7–10.30 (3)10.30– 2.30 | 3– 6.30	Straight piece rate £2 average. Fellowship system on group jobs found a most satisfactory arrangement	

[1] All Fuse work.

EXAMPLE.—Group of workers giving output of 160 shells at 9d. each . £6. Time rate is paid out of this and the balance divided equally among the group.

Sheffield

Heavy Trades.—In Sheffield it is said that the earnings of most of the women are determined by the regulations of the Ministry of Munitions. (Statutory rules and orders, No. 546, 1918.) Women labourers are usually paid a weekly time-wage, but women engaged in skilled or semi-skilled processes are generally paid according to output. In one large munitions firm, women worked under the Halsey (or War) Premium Bonus system. But this was opposed by the trade unions as "contrary to the custom of the district," and has accordingly been discontinued. In certain shell processes, what is known as production bonus (*i.e.*, a fixed time-wage, with the addition of a piece-wage for each unit in excess of the standard) is common; and the payment of shop bonus on output is general in engineering and munition works.

Very considerable variations are found in actual weekly earnings, corresponding no doubt to the wide variations in the efficiency of women workers. Earnings range from the 28s. for 48 hours, which is the minimum paid to trained workers under the order of the Ministry of Munitions, to £4 a week or more earned by women directly replacing skilled men; £4 a week is by no means common, but actual firms were found where such a sum is normal.

Lighter Trades.—In the cutlery industry, approximately 25 per cent. of the men are paid time-wages and 75 per cent. piece-wages; in the case of women, these proportions are reversed. The average earnings of women will vary between 25s. and £2 a week of 53 hours, whereas those of the male cutter will be between £2 and £3 a week. No night work is done by women in the lighter trades of Sheffield except in the manufacture of solid-handled cutlery for the troops.

Leeds

In Leeds there had been a very notable rise in the women's earnings during the year. Whereas wages of over £2 a week were uncommon in 1917, they were common in 1918. The rise in the men's earnings has been greater in most cases, so that the advance in the women's wages by no means equalizes the pay of men and women.

Still, it was stated that in many cases the women were earning a wage as high as that of the unskilled men they replaced, and

in two firms in which they were replacing boys it was said that the high wages imposed by the Ministry of Munitions made it more profitable to employ boys.

Details of women's wages were received from eight firms. In three cases it was merely stated that the wage was set by the Ministry of Munitions, two of the three saying that the minimum was 32s. 6d.

In another firm in which the substitution was incomplete, a time-rate of 24s. was paid.

In a fifth firm the time-wage was 35s.; women working on the piece system received a standard minimum of 33s., and their wage averaged from £2 to £2 10s. There was very little complete substitution in this factory.

In a sixth firm in which there was no complete substitution, the men received 47s. plus 12½ per cent. on their gross wage, the women received 35s. for day work and 43s. 8d. (time and a quarter) for night work, in each case for a working week of 53 hours. No piece rates were paid in this firm.

In another firm the time rate of 32s. 6d. imposed by the Ministry of Munitions was paid plus a bonus of ½d. or 1d. (according to the nature of the work) on each piece over 50, the output often being as great as 1,200 or 1,300. Thanks to this bonus, all the women earned over £2.

In the eighth firm, dilution had been carried far, and the "company piece-work system" was adopted with interesting results in men's and women's wages. The arrangement made is that the skilled tradesman who is working with one or more unskilled women receives his full standard rate for a normal week; the women are rated at an unskilled workers' wage, which in this particular shop is 5s. above the statutory wage laid down by the Ministry of Munitions. But the work done is reckoned at fully skilled piece rates, and the balance that remains when the rates for the skilled man and the unskilled women have been subtracted is divided between them according to their respective wages and the hours worked. The manager maintained that it was because of this system, under which no attempt was made to cut piece-rates, that he had had no trouble about the introduction of women into the works or about dilution. He said that the women were well satisfied with the system, and that in one case these women working

in partnership with a man gave him an extra 1s. a week apiece, although the man was earning £10 a week. Many of the men were earning high wages, 60 per cent. of them receiving a wage above the then income tax minimum level.

Birmingham

Few details about wages were received from Birmingham, but those that were sent were about widely different kinds of work and gave very different accounts.

1. In an electro-plating works, women were paid by the piece at the same rates as the men.

2. In a polishing and gilding factory, a girl replacing a man on gilding and doing the work better than he had done it, received from 22s. to 24s. a week, while the man had received 50s.

3. In a railway carriage works, the women replacing men received 30s. and the men 48s. Girls on sewing for aeroplanes in a different department of the same works received 35s.

No general conclusion can be drawn from these figures, but it should be remembered (*a*) that it has been customary to employ women in the metal trades in Birmingham, and that they have commonly worked for low wages; (*b*) that the great variety of work done, and the extent to which it has been done in small shops, has made organization among the workers difficult.

Liverpool

From Liverpool, also, little information was received, and again from a variety of works.

1. In a large munitions factory employing 1,400 women, 30s. a week was the standard rate for a week of 48 hours or less. No information was given about men's wages, except that foremen received from £8 to £9 a week.

2. In a works in which few women were employed, it was said that it did not pay to take women, because the work was skilled and "the women would want a living wage straight away; the boys are satisfied with 7s. 6d. a week to begin with." But in the same firm a few women were lengthening wires, work which they were said to do "every bit as well as the men," and for which they got only 25s. a week, while the men got 45s.

3. In a tin-works, in which the women's work was said to be equal if not superior to that of the men's, they received an average wage of 30s., and the firm had ceased to employ men because they would demand a much higher wage.

Glasgow

Sixteen firms in Glasgow gave some account of the wages paid. Four stated that their rates were governed by the regulations of the Ministry of Munitions, two stating that the Government orders were 6d. or 7d. an hour. The actual rate paid varied from 33s. to 50s. a week, the latter being paid on piece-work.

Four firms gave some comparison between the rates paid to women and men. One said that their wages were half those of men; their output was also said to be half that of the men. In another the wages were given as four-fifths those of men: this was the firm in which it was said that women frequently restricted output and that their work was very variable. Another said that the rate was less for women than for men because they were not so skilled, but that women were paid equally for equal work. In the fourth, the wage of the women on labouring work began at 33s., the wage of men on similar work being 47s. 10d. Women on machine work and other semi-skilled occupations receive 51s. per week as against £3 6s. 6d. paid to skilled men. The output of the women as compared with that of men was said to be sometimes greater and sometimes considerably less.

Six firms gave figures of the rates earned by women. In five of these firms, the rates ranged from 23s. a week on time-work to £3 a week on piece-work. In the sixth, more details were given. It was a projectile factory, in which the women often worked for a week, which gave their wages for 81 hours, made up as follows: On Sunday night, double time is counted to 12 and time and a half to 6, so that a girl's hours may count as 21 for a Sunday night. At times, some girls work seven shifts, *e.g.*, tool-setters, who are paid 1s. 1d. per hour, and 81 hours at this rate come to £4 7s. 9d.; in addition they have a bonus of 14s. or 15s. per week (sometimes more, and on night shifts they receive 1s. a night more). Further, what corresponds to their 12½ per cent. bonus makes up another 6s. at least, so that these girls will be earning between £5 and £6. On piece-work, girls boring face-noses frequently obtained 25s. a

shift, some objecting when they made £1 only. Machine girls on certain operations make between £5 and £7 a week. Without working really hard, a profiler easily made 10s. a shift.

These wages were the highest noted throughout the country for women.

The Inspector who gave the information earned considerably less, her salary being about £140 per annum.

Two shipbuilding firms reported on the women's wages. In one of these it was said that the women received the same wage as men, their output being equal to men's and their time-keeping very good. In the other their pay was two-thirds that of men, though their output was said to be satisfactory.

Conditions of Work, Hours, Etc.

A wider variation in the conditions of women's work is found in the engineering and allied trades than in any other group. This is due (1) to the fact that in many instances no women were employed before, consequently any arrangements for the women are new; (2) to the great profits made by some firms which has often resulted in the most lavish expenditure. Therefore, in some firms the very minimum of necessary welfare arrangements is made, and these are of a temporary nature, since the employment of women is looked on as a temporary expedient; while in others the maximum exists, the employer either thinking that women will be permanently employed, or that the plant he is putting in for their benefit will be of use to him in some way when the women have left.

The length of hours for which women work also varies greatly; the pressure of war work has led to the work being kept going night and day, which has frequently resulted in 12-hour shifts for women as for men; but has also made it possible, as in the case of the two firms already mentioned, employing women on heavy work in London, to try the experiment of 7 and 7½-hour shifts. There has during the last twelve months been a reduction in the number of firms employing women on 12-hour shifts, due partly to the recommendations of the Ministry of Munitions, partly to the recognition of the fact that long hours do not pay in the long run. Several instances were given of tentative reductions in hours becoming permanent, because it was found that the output had

as a consequence increased rather than diminished. Still, the number of firms continuing to employ women on 12-hour shifts is very great.

Accounts of conditions of work, etc., vary little from one town to another, but an interesting summary of the position in London is quoted: the hours of work in the firms visited in London have already been given (*cf.* page 57).

London

Three main divisions as to conditions may be distinguished, though there are many grades between each.

(1) In the new type of shop (not necessarily newly-established) run on the lines of "scientific management," every one of the latest welfare developments is found; these include canteens, concert rooms, rest-rooms, ambulance-rooms, nurses, women-police, etc. In such works, women are entirely under women, except for the actual work of the shop, from the moment of employment to that of discharge.

(2) In some old-established firms where women are newly employed, welfare arrangements have been introduced to make the women comfortable in a rough-and-ready way, without any idea of management. Available premises have been adapted. The supervisor is rather in the position of a foreman than that of a member of the management; but, wherever possible, she takes complaints from the girls to the office, the manager preferring this procedure, as he finds it difficult to refuse leave of absence, etc., directly to the girls. Such firms are not as a rule under Government control.

(3) In a third type of firm the aim is to carry out the minimum of regulations with regard to women's labour, and make no special arrangements. In one works employing from two to three hundred women, the manager stated that—

> Much greater luxury had been introduced into the shops since the entry of women; this luxury has also affected the men, and has not, in the opinion of the manager, tended to greater efficiency.

As an instance, he quoted the two quarter-hour breaks in the morning and afternoon (the works being run with two 10-hour shifts); as a result of these breaks for the women, the men also

made a three-break day of it, and the manager estimated the consequent loss at £5,000. The same firm complained bitterly of bad time-keeping, discontent, etc.

Works which come under this heading are generally old-established ones with famous names, which fear little from competition, or, as in the East or S.E. districts, small firms which have sprung into comparative prosperity since the war began, and have either not heard of the latest developments in management or, if they have, are dubious about them and are not prepared to reconstruct their works for a problematical gain.

Trade Unionism among Women in Engineering

Mention has already been made of the increase in female membership of trade unions during the past year. For the most part, women have joined general labour unions: in some cities, they tend to join unions for women only; in others, mixed unions. The reason for their doing one rather than the other seems to depend on the character of the organizers in the different localities. A few notes are given below as to the extent to which women are joining the unions in different places.

London

In the firms visited, about 60 per cent. of the women were organized, either by the National Federation of Women Workers or by the Gasworkers' Union. In one or two firms there were especially strong works committees, on which both men and women were represented, and to which all grievances were referred. When the women were organized, it was generally as a result of encouragement on the part of the men.

Where the object of the management is to get as much as possible out of the women at the lowest possible cost, two aims are pursued—

1. To secure "amenable women."
2. To keep the women separate from the men.

One manager in a wood-cutting shop gave the following account of his methods—

> At first the men and women worked together, and the women came too much under the men's influence; they refused to work for the wage offered them and were continually limiting the output. All these girls were discharged; another shop was opened into which

girls were put separately under men tool-setters, etc.; ever since they have been perfectly contented and the arrangements have been of great advantage to the firm.

SHEFFIELD.—HEAVY TRADES

In the many industries of Sheffield, the craft or occupational unions have not generally opened their doors to women (the Iron and Steel Trades Confederation being an exception) and, when they are organized at all, women have generally joined either the N.F.W.W. or the general labour unions. As illustrating the spread of trade unionism during the war, figures obtained from two of these unions may be quoted: in 1914 they had a joint membership of about 400 women in Sheffield; now there are over 9,000 names on the books of the two societies. Some of these, but probably not a very large proportion, are, however, drawn from the lighter trades: a much larger number must represent women and girls in the national projectile factories.

SHEFFIELD.—LIGHT TRADES

The light trades of Sheffield are notorious for the large number of craft societies in which the artisans are organized. Most of these are extremely jealous of trade privileges; a system of apprenticeship is still maintained, and women are usually excluded from membership. The Cutlery Union, itself the result of a recent fusion of small societies, is, however, open to women, and about 50 per cent. of the women and girls engaged in the processes preparatory to the hafting of butchers' and table blades and forks are now members of the society. The terms of membership are the same for women as for men, except that women are not admitted as contributors for sick benefits; and, in practice, women, though eligible, do not often contribute to the unemployment fund. In the silver trade, about one-third of the women eligible have joined the Gold, Silver, and Allied Trades Amalgamation, under a special scale of contributions and benefits; and many other women in this group of industries have joined one or other of the general labour unions.

LEEDS

In Leeds there has been a decided increase in the women's membership of trade unions during the year. In some works all

the women are organized; in others, none. Only one case was met with comparable to the one quoted in London of a desire on the part of the management to prevent the women from joining unions; in that particular case, the firm was strongly against trade unionism for both men and women. A manager said it was the practice of the shop to ignore both the trade unions and the shop stewards. As a rule, however, the attitude of the management towards the unions is expressed by one employer, who states that he would rather have to deal with the trade union official than with a "babel of workers."

But often the women do not take the trouble to join any union unless they are urged to do so by the men.

Glasgow

In Glasgow, out of seven firms giving information, two stated that the women were not joining the unions; in a shipbuilding firm, it was said that all the women had joined the labourers' union. In two engineering firms it was stated that the men forced the women to join, and in another that almost all the women had joined because the men were desirous of their doing so. In another, the women had joined at first, but had left the union in dissatisfaction; it was thought that this was due to the excellent organization of the management, which made it difficult for the girls to realize that they would gain anything by joining unions.

Conclusion and Opinions as to Employment after the War

Problems as to the future of women in the engineering and allied trades are rendered especially complicated by—

(1) The great amount of special war-work undertaken.

(2) The alteration that has taken place in the character of the work done because of the number of unskilled and semi-skilled workers employed.

(1) As much of the work has been additional, much is likely to cease at the end of the war. This would seem to indicate the probability of many women thrown out of work in certain branches of the metal trades seeking for admission to others. On the other hand some of the additional work in which they have been occupied,

such as aeroplane work, is likely not only to continue but to expand, and many openings for women may be found in it.

(2) The alteration in the character of the work has largely taken place in the additional work; consequently when the industry swings back to the making of peace-goods instead of war-goods, the industry may to some extent assume its old character, *e.g.*, in a works in Leeds which had been making locomotives, shell-work and copper-band making were undertaken, many women were introduced, and with them a new system of repetition work. But when the firm returned to locomotive making because of a change in demand, it also returned to its old methods of production. This is an instance of what may happen in many works when they revert to their ordinary production; in such cases the women are likely to be dismissed and new openings will not be found for them. On the other hand, it must be remembered that many firms have been convinced during the war of the increased economies that can be effected by new methods, standardized products, and the employment of many semi-skilled workers. In such works there will be an effort on the part of the management to retain the women. Much depends on the number and determination of such firms.

It appears, then, that the immediate future of women in the industry depends largely on the future character of the industry. If it becomes more and more a semi-skilled industry, it will be increasingly possible for it to accommodate the present great numbers of semi-skilled women—and men. If it should once more become an industry in which a large proportion of the workers are really skilled, there will be few openings for women who have not had the opportunity of becoming fully skilled. There seems little doubt in the minds of employers that many women could become skilled, and it has been seen that in many cases they are being employed on delicate and highly-skilled processes. But this is again a matter of opportunity.

The question as to whether opportunities for training will be given rests largely with the men's unions as well as with the employers. Even if they were given, it is probable that only a small number of women would take full advantage of them, because of their "marriage mortality."

The unions may, however, not only place difficulties in the

way of training and openings for skilled women, but for semi-skilled ones in works in which the standardization of product remains.

One other point should be noted. That is the attitude of the women themselves. It has already been suggested that considerable unemployment among women formerly employed in the metal trades is likely to follow now that peace has been declared. Two peculiarities about the women engaged in these trades may be mentioned—

(i) A larger proportion of women engaged in them have taken up the work from patriotic motives than are to be found in other trades.

(ii) A larger proportion of women in these trades are married than in other trades. This is due to the great amount of additional labour employed; and as was seen in the general notes, additional women were to a great extent married women.

The result is that: (i) women who have taken up the work from patriotic motives are likely to give it up from the same motives and because they never had any intention of remaining in it; (ii) many of the married women will be glad to give up the work when their husbands return.

At the same time, there are numbers of women who have newly entered these trades who have become keenly interested in their work and wish to keep to it. Also numbers are either single or widowed, and dependent on their own wages: many of these will be anxious to remain in the metal and engineering industries.

A few notes of opinions from different places are given below—

London

In London it was found that the opinions of employers as to the desirability of continuing to employ women after the war varied according to the kind of work done.

The shops in which radical alterations had been made and in which work of a standardized type was carried on, wish to retain them (*e.g.*, aeroplane works). The chief reason given was that women were much cheaper, their output being greater and their wages less than is usual with men.

But where methods were unaltered and women were directly replacing men, it was found that employers would generally prefer

men to women, unless the women could be immune from the union rates, which they thought would be unlikely at the end of the war. One employer said—

> Other things being equal, I would certainly choose men, but women are cheaper and more easily managed, although necessarily weaker in health.

On heavy work, all employers would prefer men.

The men and the trade unions are beginning to realize that "women in light engineering have come to stay"; their change of policy indicates this. Instead of looking on women as visitors in the shops, many of them—notably the N.F.W.W. in conjunction with the A.S.E. and the various unions in connection with the aircraft industry—are striving for the application of men's rates to women.

Although a large number of the married women, especially soldiers' wives, will return to their homes now that the war is over, the great majority of the young girls will undoubtedly want to remain in the industry. How far the engineering trade will be able to accommodate them will depend to a very large extent on the following considerations—

(1) To what extent the standardization which has already taken place can be applied to work of a different nature (*e.g.*, whether a motor firm at present working on fuses will apply the new methods to motors).

(2) The method of contracting—the possibility of much greater specialization of contract.

(3) The supply of raw material.

The more go-ahead employers consider that standardization and specialization will be profitably applied to a very great number of departments of the industry. On the other hand, a notable trade union official stated emphatically that the revolution would be far too drastic to be carried out throughout the trade. In view of the ignorance of many employers as to the advantages of the new methods, there seems to be some evidence to bear out this view. On the other hand, even in the most retrograde shops, alterations are being gradually forced as women are introduced in greater numbers.

All agree in thinking that during the time of readjustment a

period of unemployment for women is inevitable. It may be noted that discharged soldiers are already taking the place of women under exactly the same conditions as those under which the women worked.

SHEFFIELD

Heavy Trades.—Opinions differ so widely as to the probable future of women, that generalization as to post-war conditions is futile. Interrogated as to whether it was probable that women would retain their present positions after the war, two of the ten employers who supplied information replied "Yes," one replied "No," and the remainder would not commit themselves beyond a cautious "probably" or "a proportion." Evidently there is no concerted policy for the widespread use of women in place of men such as has sometimes been suggested.

LEEDS

Few definite opinions were given. In one great aeroplane works, the manager was extremely anxious to retain women, but anticipated a great struggle with the men's unions. In a firm doing a great variety of munition work, the management stated that after the war it would be possible to employ a large number of both the men and women at present engaged, as they intend to carry on other branches of industry. The men, however, were of opinion that the unions would not allow women to continue their work when the war ended; individually they seemed willing that the women should remain if there were room for them and men were not crowded out. In another works, the manager, foreman, and supervisor agreed in wishing to retain the women and in thinking that the women would wish to stay in the work.

In three works it was said that women were unlikely to be retained; in one because the men do not wish it, and because the women are not likely to wish it either; in another because the work was of so skilled and variegated a nature, that only highly skilled workers could be employed.

One employer thought there would be an immense extension of dilution, and that though few women would think it worth their while to be trained, they might well be used as "incidental" workers to their own advantage and that of the employers.

Glasgow

In Glasgow, out of twelve firms reporting on this subject, four stated that women would not be retained: one of these gave as a reason the Government pledge to the trade unions; three others said that they were all employing women as additional workers on munitions. Six gave an uncertain answer, saying that it was impossible to prophesy or that it depended on labour conditions, or on how many men returned. One firm stated that there would only be competition in unskilled work. Two firms stated decisively that women would be retained, one saying that 10 per cent. of the women would be kept and another that about 120 out of 219 engaged in shipbuilding would remain.

III. Clothing Trades

In the clothing trades in general, there was an increase of 7,700 in the number of women employed in 1917–18, chiefly due to the tailoring trade, in which 18,100 more women were employed in April, 1918, than in April, 1917; there was also an increase of 1,300 in the boot and shoe, and of 600 in the dyeing and cleaning trades. In all other branches of the clothing trades there was a decrease. The increase took place mainly in the last quarter (Jan., 1918–April, 1918) owing to seasonal causes, but it had been noticeable throughout the year.

NUMBER OF FEMALES EMPLOYED IN THE CLOTHING TRADES

July, 1914.	April, 1917.			April, 1918.		
Total.	Total.	Decrease in No. employed since July, 1914.	No. stated by employers to be replacing men.	Total.	Decrease in No. employed since July, 1914.	No. stated by employers to be replacing men.
612,000	567,300	−44,700	35,000	575,000	−37,000	46,000

NUMBER OF FEMALES EMPLOYED IN DIFFERENT BRANCHES OF THE CLOTHING TRADE

	July, 1914.	April, 1917.		April, 1918.		
	Total.	Total.	Increase + or decrease − in No. employed since July, 1914.	Total.	Increase + or decrease − in No. employed since July, 1914.	No. stated by employers to be replacing men.
Tailoring	157,000	152,800	− 4,200	170,900	+ 13,900	14,400
Shirtmaking	75,000	66,100	− 8,900	65,400	− 9,600	2,000
Dressmaking and Millinery	136,000	110,600	−25,400	107,700	−28,300	2,200
Boots and Shoes	56,000	70,200	+ 14,200	71,500	+ 15,500	16,900
Hat, Cap, and Bonnet	30,000	28,700	− 1,300	27,500	− 2,500	2,900
Gloves, Corsets, Sticks, Umbrellas, Flowers, and Others	46,000	42,600	− 3,400	39,700	− 6,300	2,800
Dyeing and Cleaning	12,000	11,000	− 1,000	11,600	− 400	1,600
Laundries	100,000	85,300	−14,700	80,700	−19,300	3,200
Total Clothing Trades	612,000	567,300	−44,700	575,000	−37,000	46,000

NUMBER OF FEMALES EMPLOYED IN THE CLOTHING TRADES IN EACH QUARTER OF THE YEAR 1917–18

July, 1914.	April, 1917.	July, 1917.	Oct., 1917.	Jan., 1918.	April, 1918.
612,000	567,300	571,000	568,000	568,000	575,000

In all branches of the clothing trades, with the exception of the boot and shoe trade, and that of the umbrella and walking-stick makers, the proportion of women employed had always been greater than that of men.

In London the total number of workpeople employed in the clothing trades in July, 1914, was about 162,000, and of these only 30 per cent. were men. The scope for substitution has consequently not been very great. In fact, although the number of males employed had decreased by April, 1918, by about 36 per cent., the number of females employed in the group as a whole had only increased very slightly since 1914. There was, however, a rise of about 33 per cent. in the females employed both in the tailoring and in the boot and shoe trades, but this increase was counteracted by a fall in dressmaking and in some of the miscellaneous clothing trades, such as artificial flowers. In some of the individual trades, moreover, the increased proportion of the women employed was due to a greater demand for work which had always been done by women, *e.g.*, in a hat, cap, and helmet factory the following figures were given—

	Men.	Women.	Total.	Proportion of Men.
July, 1914 . .	143	150	293	48%
Jan., 1918 . .	89	201	290	30%

but it was said that there had been practically no substitution except in the warehouse and counting-house, the great diminution in the proportion of men employed being accounted for by the fact that work at which women had always been engaged in greater numbers had increased.

Tailoring Trade

Extent and Nature of Substitution

In the heavy tailoring trade before the war, the women engaged bore a proportion of 63 per cent. to the actual workers. By July, 1918, it was 74 per cent.

During the war, women were put in the place of men on all processes, though their substitution on some (*e.g.*, using the guillotine) was rare. It was in the cutting-room that the greatest

opposition to the employment of women occurred; but as the numbers of men were steadily depleted, the women were more readily admitted.

Investigations have been made with regard to substitution in this industry in London and Leeds, the two greatest centres of the trade.

London

It is reported from London that the processes chiefly affected are—

1. *Machining.* The number of men has been greatly reduced since 1914. Many Jewish men of foreign birth had been employed upon it before the war, but it is now becoming almost entirely women's work.[1]

2. *Pressing.* This process was always partly carried on by women, but the heavier presses were worked by men. The difficulty of procuring men has led to the extended use of the Hoffman presses, which women can easily use, with a treadle. These presses have to a great extent been introduced into high-class pressing where a heavy iron was formerly used.

3. *Cutting.* Female employment in the cutting-room was not quite unknown before the war, and appears to have been common in Paris. But in London it was rare, and strongly objected to by the trade unions. Now, however, women are employed either in separate cutting-rooms away from the men, or in the same room, generally under the supervision of skilled men. As a rule, they are employed on subsidiary processes, but the responsibility of their work varies from one shop to another; they are found—

(*a*) Merely dividing the cloth before it is put on the table to be cut in bulk.

(*b*) Dividing and then marking the lay.

[1] [*Note.—Alien Labour.* It was stated by one trade union official that men of Russian Jewish nationality were taking the place of girls and women on machines for less wages. The statement was denied by the Secretary of the Jewish operatives, who said that male labour, chiefly unskilled and from other trades, had come in early in the war and had been put on to Government contract work. But the Russian Jews who came in in this way took the place of male, not female, labour, and had only done so at the beginning of the war. For the last eighteen months, no more have come in; many have been sent back to Russia, and many are in the Army. The original statement was partly confirmed by an employer, who said that Russian Jews had tried to get women's work, but at higher, not lower, wages; but that they had been prevented from doing so by the necessity of getting a permit from the Ministry of Labour.]

(*c*) Dividing, marking the lay, and using the band-knife to cut the cloth.

Leeds

The experience in Leeds was very similar. The number of women employed in the tailoring trade rose from 17,000 in July, 1914, to 20,300 in April, 1918. Here, again, a considerable amount of substitution has been due to a number of men, chiefly Jews, leaving the machining work to the women. But in Leeds no case was discovered of women employed in cutting-rooms separate from the men's, nor of a woman employed on the band-knife. Many have been introduced into the warehouse; others have taken men's places as passers, in fitting up, and in the cutting-room. The following facts as to the numbers of women employed on different processes in the place of men were given by three firms, two of which are among the largest in Leeds—

Warehouse and Stock-rooms.	Clerical Work.	Machine Work.	Passing.	Pressing.	Fitting up.	Cutting Room.	Total.
19	10	3	16	2	18	25	118

It was noticed both in London and in Leeds that the employment of women had led to—

1. The subdivision of processes.
2. The use of lighter instruments.

1. The subdivision of processes has been great, especially in London; and one employer stated that the girls preferred subdivision because it made the work more rapid and their earnings higher, as they were paid by the piece. It may be noticed, however, that the subdivision has largely been brought about by the pressure of demand; it is not so much the substitution of women for men that has caused it as the necessity for carrying through a number of Army contracts with great speed.

2. The use of light pressing machines in the place of heavy irons has already been referred to; pressing machines are, further, being run by electricity instead of steam; and in shirtmaking, electric protected knives are being used for cutting. These alterations are generally economical, and are likely to be continued. Others, such

as the use of lighter trolleys, the making up of smaller bales, etc., in the warehouse, are probably only temporary.

Success of Substitution

Output.—Thirteen factories in London and Leeds reported on the success of the women. Six stated that they were satisfactory in output; two, that their output was about 50 per cent. less than that of the men; and five, that it was less than men's. In one firm in Leeds it was said that the women's output was less than that of men on every process except assembling, but that at putting together the parts of garments they were quicker and better.

With regard to the employment of women on the band-knife, it was said that output was diminished because women had not as much nerve and skill as men, though in shirt-making, when the lays are not so thick, a small electric band-knife can be used by women to advantage; also the blade is protected, and this gives the women a steadier hold on the knife.

Time-keeping.—On the whole, the time-keeping was said to be poor as compared with that of men. This was attributed to health, natural irresponsibility, and the ties of married life. Some employers stated that many married women, being in possession of separation allowances, were independent and did not care about such details as punctuality. One employer in Leeds said that though girls on time-work came fairly regularly, those working by the piece were apt to miss days; the firm, however, did not lose much by this, as the lost time was generally made up by extra effort later.

Quality.—Favourable reports were given as to the quality of the work in almost all cases. In London it was said that the quality of the women's work was generally better than that of the men, if the quantity was less. The employers found that the women seemed to care about the finish and appearance of a garment instead of merely aiming at turning out a given number.

Wages

Conferences were held by the Home Office from December, 1915, to March, 1916, with representatives of the Wholesale Clothing Manufacturers' Federation and, separately, with the Amalgamated Union of Clothiers' Operatives. As a result, a settlement was

arrived at which is embodied in separate undertakings given by the two parties. The clauses dealing with wages are—

4. That females introduced to take the place of men employed on piece-work shall be paid the same piece rates as the men they replace.

5. That the Federation will recommend to all its members that females employed in a Cutting, Trimming, and Fitting-up Department shall, as from 1st May, 1916, be paid the following minimum time rates, namely—

Under 19 years of age	4d. per hour.
19 and under 20 years of age . . .	5½d. ,, ,,
20 years of age and over	6d. ,, ,,

Provided that in the event of any female worker being employed for the first time at such work, at or over 19 years of age, the rate to be paid during the first two months of her employment shall be 1d. per hour less than the rate appropriate to her age as set out above.

The terms Cutting, Trimming, and Fitting-up shall include the following processes—

Marking in or marking up.
Laying up, or folding cloth or linings or other material.
Cutting.
Dividing.
Fitting-up.

and any other processes usually carried on in and connected with the Cutting, Trimming, and Fitting-up branch of the trade.

The minimum rates specified in Clause 5 of the undertakings were fixed by the Tailoring Trade Board.

Conditions are being inserted in Government contracts for clothing to make the terms of the undertakings binding on all Government contracts.

An interesting commentary on the wages clauses of the agreement was furnished from the offices of one of the largest clothing unions. It was stated that—

The great majority of women workers were and are employed on piece rates which vary considerably, and notwithstanding repeated attempts to compile general lists of piece rates we are unable to furnish any trustworthy figures or average as to the precise wages earned in July, 1914. The average earnings would be found to vary considerably in different towns and even in the different workshops in any particular town. . . . The Trade Board rate in July, 1914, for women workers 18 years of age and over, with 12 months' experience in the trade, was 3¼d. an hour, although an official notice to increase the rate from 3¼d. to 3½d. had been issued in accordance with regulations.

The present Trade Board rate for women workers of 18 years and over is 5d. an hour. The increase in the Trade Board rates does not, however, necessarily represent a corresponding increase in the women's piece rates. Exhaustive inquiries indicate that there has not been any general advance of piece rates during the war. The rates may have

been varied according to alterations in the manufacture of garments. In many instances the original piece rates for the manufacture of khaki uniforms have been reduced.

Our organization negotiated agreements with the Home Office for the substitution of labour in Cutting Departments, and a standard rate of 6d. per hour was fixed for the labour in question. The women were unorganized at the time, and the rates were secured mainly through the efforts of our men in the organization. The majority of the women employed as substitutes are members of our organization.

In October, 1917, we secured, through the Committee on Production national war bonuses of 1½d. an hour for men, 1d. an hour for women, and ½d. an hour for boys and girls. The award was estimated to affect about 250,000 workers. It was the first occasion on which trade union action had secured direct increases of wages for all workers in the clothing industry. (31st May, 1918.)

It is reported from London that an effort has been made by employers to restrict the bonus to khaki work, with a view to its being abolished when their firms return to civilian work at the end of the war.

Details of comparative wages were furnished by hardly any of the firms reporting. One firm in Leeds gave the following facts—

On pressing, women were paid at the same rate as men; but their output and, therefore, their weekly wage was less.

In the cutting-room, men received £2 14s. weekly; women received £1 4s. plus 50 per cent. bonus (*i.e.*, 6d. an hour), the Trade Board rate.

On machining and finishing, where in this firm women only were employed, they earned on the average, on piece-work, 23s. a week plus 50 per cent.

It was reported from Liverpool that the women's wages were only about two-thirds of those of the men; and that when a man received £4, a woman only got £2 15s. for the same work.

Conditions of Work

Little alteration has been made in the conditions of work since women have always been employed, and special extra arrangements were, therefore, unnecessary. At the same time, the general movement towards improved conditions has resulted, in some instances, in the introduction of better accommodation. Canteens and rest-rooms have been added here and there. In London it was said that, though there was usually some accommodation for

girls to have their meals on the premises, they often went home for them, as they lived close by, and also went outside for treatment if any accident occurred. In the firms visited in London, there were—

> No rest rooms, very primitive sanitary arrangements, and the women worked in all states of health and in the last stages of pregnancy.

The hours of work (*see* Schedule, p. 81) were also longer than in Leeds.

Trade Unions

Women in the tailoring trades enter unions in great numbers, but it is generally said that they do not remain in them. The approximate number of women belonging to the United Garment Workers' Union in July, 1914, was 20,000. By May, 1918, the female membership had grown to about 50,000. From the offices of the Amalgamated Society of Tailors and Tailoresses, in which the men and women are organized in separate branches, great disorganization among the various trade unions was reported. It was said that there had been a failure in organizing the women during the year 1917–1918. The usual complaint was made that the girls joined up but did not remain in the union; no explanation was given, though it was said emphatically that it was not the prospect of marriage which made the girls careless.

Prospects

In the agreement already quoted (p. 77) there are three clauses dealing with the re-instatement of men in work on which they were formerly engaged. According to these clauses, employers and trade unions agreed—

(i) That women should only be employed on men's work if men were not available.

(ii) That the men should be re-instated as soon as possible.

(iii) That the old workshop and factory customs should be restored as soon as possible.

This means that, now that the war is over, women will quickly be turned out of the cutting-rooms, and any superfluous number out of the trade. Many trade union officials expressed distress at the thought of the numbers of women who were likely to be discharged,

many of whom had come in from other trades and were earning comparatively high wages.

Actually, however, it was reported from London that the tide seemed to be turning in the opposite direction. Discharged soldiers were returning, and there was a definite scheme of training for disabled men. But they were faced with the prospect of women being firmly established in the industry, having become organized, and the employers being anxious to keep them. The men were already finding it difficult to get work. One employer went so far as to say that it was a man's problem, not a woman's. He had just seen an ex-soldier who had been turned away from eight factories.

This state of affairs does not seem unnatural when it is remembered that it was really only in the cutting-room that the men had a monopoly, and that elsewhere women replacing men were only entering in larger numbers into work customarily, or frequently, done by women, *e.g.*, machining and pressing. So that, except in the case of a man returning to the factory in which he was originally employed, there would be no reason for dismissing the women or taking on men in their places. No doubt in the cutting-room the men's privileges will be restored. It may be noted that here, at any rate, one process, that of using the band-knife, is acknowledged to be definitely unsuitable for women, at any rate on heavy work. The abdominal pressure from the semi-circular opening in the bench is a strain on men, but is peculiarly bad for women, and liable to cause dizziness and accidents quite apart from the bad effect on their general health. Workers on the band-knife are a very small proportion of those employed in the cutting-room, where many of the processes can easily be carried out by women.

It was anticipated that there would be a great demand for civilian clothing at the end of the war, and it was thought that this demand might make it possible to absorb all the newly-engaged women on processes which were left open to them. Some London firms had constructive proposals with a view to this. In one case, it was suggested that the smaller factories in outlying districts should be done away with and larger ones built on their sites, though, considering the present difficulties of building, it is not easy to see how this would immediately help the problem.

ILLUSTRATIONS OF FIRMS—LONDON

Firm.	Processes on which women substituted.	Result.	Source.	Welfare.	Hours.	Training.	After the War.
A	Cutting room: only dividing, not making even	Bad time-keeping, output, and quality	99% Local.	None: meals off premises	8 a.m.–7 p.m. 1 hr. off at dinner time, ½ hr. at tea and in morning	Unskilled under men	Have men back as soon as possible
B	Cutting room: parting and laying on. Pressing — Hoffmann press	Output ½ in factory generally: ⅔ in cutting room. Time-keeping and quality satisfactory	Local	None. Sanitary accommodation fair.		Mostly unskilled.	Great problem. Must stand by the Agreement. Thinks women have come to stay
C	Cutting room: dividing, laying on. *Band-knife*, viewing and final viewing. Forewomen	Time-keeping fair. Quality not so good. Output about ¾	Local	Hadn't heard of welfare! Canteen pretty good; airy and clean	8.30–6.30. 1 hr. dinner, ½ tea; 10 mins. in middle of morning		Must have men back; Agreement
D	Chiefly counting-house	Very favourable. Time-keeping not so good	Local	None	8–6.30; rest 10.30 for 10–15 mins. 1–2 p.m. & 4.30 for 10–15 mins.	Training of any display of intelligence, but will welcome Fisher's Bill	Not a problem: very little substitution, mostly expansion
E	Separate cutting rooms, and on *band-knife*	Good. Subdivision to a great extent	Local	Have lavatories; First Aid Corps. Meals on premises	Women, 8–8; Men sometimes 8–10 p.m.	Little training	Will take men back
F	In cutting rooms *before the war*. Not on band-knife	Excellent. Time-keeping satisfactory	Mostly local	No extra arrangements			Men must come back but prefers women: bright, intelligent, and docile

Boot and Shoe Industry

Extent and Value of Substitution

It will be seen from the figures given (p. 72) that among the various branches of the clothing industry, the tailoring and the boot and shoe trades are the only ones in which there has been a positive increase in the number of women employed. In all other branches, the number of women has declined since July, 1914. The actual increase and the number of women said to be replacing men has been greater in the boot and shoe trade than in the tailoring trade, and the percentage increase 27 per cent. as compared with 8 per cent. in the tailoring trade. There was, of course, far more scope for substitution, 63 per cent. of the workers in the tailoring trade and only 34 per cent. of those in the boot and shoe trade having been women before the war.

Some investigation into substitution in this trade was made in Leeds; but Leeds was an exception to the general rule, it being estimated that the number of women employed in the trade had rather fallen than risen during the war, the numbers employed being 2,000 in July, 1914, and 1,900 in April, 1918. It must be remembered, however, that Leeds, which manufactures heavy goods, is not so suitable a centre for substitution as some others; also that, though owing to the great munition demand for women's labour in the district, the number of women in the trade had diminished, considerable numbers of those employed are replacing men. The proportion of women to men had increased considerably. Returns from three firms are given, two in Leeds, one in Glasgow—

	July, 1914.				May, 1918.			
	Number Employed.			Percentage of Women to total employees.	Number Employed.			Percentage of Women to total employees.
	Men.	Women.	Total.		Men.	Women.	Total.	
Firm A, Leeds .	166	95	261	36	81	94	175	54
„ B, Leeds .	147	65	212	31	137	110	247	44
„ C, Glasgow .	294	128	422	30	204	290	494	59

With regard to the nature of the work on which the women are engaged, details were received from eight firms in Leeds; and it appeared that there was hardly any process on which an attempt had not been made in one firm or another to substitute women

for men. Trade union regulations as to men's and women's work had been very complete before the war, and had been relaxed, as quoted in the report for 1917 in various districts because of the pressure of war demand; and the relaxations had been more complete in Leeds than in most other districts, accompanied by arrangements for paying women at the same rate as men.

The processes on which women were said to be newly employed were—

	1. *Pattern Making Department.*	
	Cutting	
	2. *Clicking Department.*	
Hand clicking	Machine Clicking	
	3. *Fitting-up Department.*	
Fitting-up	Skiving	
	4. *Making Room.*	
Sole-tacking	Blake-sewing	Levelling
Sole-sewing	Loose nailing	Cuttan nailing
	5. *Heeling Department.*	
Heeling	Slugging	
	6. *Finishing Department.*	
Edge Paring	Bottom Scouring	Heel Scouring
Polishing	Painting	Top Ironing

In one firm where children's boots and shoes were made, between 30 and 40 women out of 94 were engaged on men's processes; and this firm has a branch at Derby in which women only are employed on every process. It was said that no process was unsuitable for women. In firms making heavier articles, and particularly in those engaged on Army boots, the substitution was much smaller, not more than 23 women being found on men's processes in firms employing about 200 workers.

Substitution has been complete for the most part with no change in the processes.

Success of Substitution

In an industry in which the processes are so varied and in which the weight of the article handled differs so much from firm to firm, it is difficult to get any estimate of success which can be relied on. The comments were, as a rule, favourable; and in some instances, as in the finishing processes on children's shoes, the women were said to be superior to men. It was noticeable in returning to factories engaged on heavy work visited a year earlier, that the cases of

women with a much greater output than men were no longer in evidence. In several cases it was said that the women who had produced remarkable results when put on piece-work for the first time, had broken down. In five firms—one in Glasgow, one in Liverpool, and three in Leeds—the output was said to be less than that of men; in five other firms in Leeds it was said to be satisfactory or as good as men's. The Liverpool firm stated that the output was very satisfactory, but that it could not be expected to be as great as that of experienced men who had been doing the work for ten or fifteen years.

With regard to time-keeping, all the Leeds firms, with one exception, reported adversely on the women, though the Liverpool and Glasgow firms said their time-keeping was good.

Wages

As has already been noted, women in Leeds are, by agreement, paid at the same rate as men. The following figures were given by one firm of the average weekly wage received by women—

Blake Sewing . .	.	36s. day rate with bonus in addition
Levelling	(average)	36s. piece „ „ „ .
Heeling	„	30s. „ „ „ „ „
Painting	„	40s. „ „ „ „ „
Cleaning, Polishing	„	35s. „ „ „ „ „

In another factory it was said that the women received from 25s. to 40s. a week, with an additional bonus of 8s.

The one Liverpool firm reporting on this trade said that the women did not command the same rates as the men and could not expect to do so, because their experience was so much less.

Conditions of Work

Few new arrangements have been made owing to the introduction of women. The numbers newly brought into any single factory have not been large, and they have shared any canteens, etc., which existed with the women who were already there. Indeed, in one or two cases, owing to building difficulties, arrangements which would otherwise have been made have been held over.

The usual hours of work in the Leeds district are 52½.

Trade Unions

Women who have taken men's places have generally joined the union. It was reported from Glasgow that they were "forced"

to do so. In Leeds it was said that, though they joined, they took little interest in the union.

Prospects of Women in the Industry

There seems little doubt that the men in the industry will reassert their claim to the work in which women have replaced men. It may be, however, that some readjustment will be made with regard to certain processes on light makes of boots and shoes in which women have proved themselves efficient. As has been seen, the number replacing men is considerable, and there is not quite the same chance of their being reabsorbed into other departments of the trade as in the case of tailoring, partly because the percentage increase in the number employed has been so much greater, partly because they are not drawn from other departments to anything like the same extent, and partly because the civilian demand for boots is unlikely to expand to the same extent as that for clothes. In Leeds, where the union is strong, the matter must remain in the hands of its members. Elsewhere, the results may be decided by other causes. A Glasgow firm reporting on the matter said that the continued employment of women depended "on labour conditions." One Liverpool firm stated that women would certainly continue to be employed on some of the lighter forms of labour on which men had formerly been engaged.

Woollen and Worsted Trades

In the woollen trade the total number of women employed has risen during the war, though there has been a slight fall from April, 1917–April, 1918. In the worsted and the carpet and rug trades there has been a considerable diminution in the number employed, and during the last year the decrease in the numbers engaged in the worsted industry has been rapid.

	Number of Women Employed.			Number estimated to be replacing Males.
	July, 1914.	Apr., 1917.	Apr., 1918.	
Woollen . . .	65,000	74,400	74,100	6,800
Worsted . . .	85,000	84,700	81,400	2,800
Carpets, Rugs, etc. .	20,000	18,400	18,000	1,900
Total . .	170,000	176,500	173,500	11,500

It will be seen that a considerable number of women are said to be replacing men; but, as a rule, it is found that the substitution consists of placing women on processes which were only done in the particular instance by men, and were performed indifferently by men and women, or which were performed by women in other shops or districts, though not in the ones in which substitution was reported. For instance, there is a considerable variation in the extent to which women are ordinarily allowed to do perching; some firms reporting say they have never had women on the process before, others that it was merely the extension of a common practice. However, in the eight firms reporting on the matter, women were found blending, milling, pressing, and, in a worsted spinning mill, overlooking. None of this work had formerly been done by women; also women were employed on packing and in the warehouse work, which was normally considered too heavy for them.

Six firms employing 737 women and 380 men reported that 50 women were taking men's places. There has been a good deal of subdivision, because much of the work is heavy.

On the whole, the reports given of the women were good, five out of eight firms saying the women were good or satisfactory. In one firm of blanket manufacturers, there was great enthusiasm about the women's work: it was said that the men with whom the women worked preferred them to men; and there was one woman in the milling shed, who was said to be better than any man. With regard to the women replacing men as overlookers in the worsted spinning mill, the report was not so favourable. The women were said to do well as far as their knowledge and capacity permitted, but both were limited.

Figures as to wages were obtained from the blanket manufacturer.

Women.	*Men.*
30s. to £2 10s.	47s. to £5

The men are paid by weight of output, and the women get a standard rate; when they replace men, they get what a man not in the "combine" would receive.

The overlookers in the worsted spinning mill were paid as follows:

Women, Weekly Wage.	*War Bonus in Addition.*
Begin at 28s., rise by 1s. per 2 months to 34s.	10s. 6d.
Men, Weekly Wage.	*War Bonus.*
Varies with skill and experience; 41s. a rate that is paid.	18s.

Two firms of woollen manufacturers reported that they intended to keep the women in the processes which were not too heavy for them. The Worsted Spinning Mill reported definitely that it would not retain them—a pledge had been given to the men that they should be reinstated; further, they found the women did not like the responsibility of the work and would be glad to go back to machine-minding.

IV. COMMUNICATION AND TRANSPORT

Post Office Work

The number of women engaged in Post Office work has nearly doubled since 1914—

Number of Women Employed.		Number said to be replacing Males.
April, 1914.	April, 1918.	
60,500	111,000	64,000

Considerable changes have taken place in the Post Office work during the war, entailing readjustments of staff which make it difficult to be sure of the exact amount or success of substitution. For instance, in one large town, figures for which were given in 1917, the position has been as follows—

	Women Employed.		Men absent on Service. May, 1918.	Women taking Men's places. May, 1918.
	May, 1917.	May, 1918.		
Indoor Postal Work	252	341	168	180
Outdoor ,, ,,	370	352	360	352
Telegraph Delivery .	32	77	119	77
Total . . .	654	770	647	609

It will be seen that out of the 770 women newly employed, 609 only are said to be taking men's places. This is on account of the special work devolving on the postal indoor staff in respect of handling letters, etc., for the armies abroad, and other new work: 123 women were engaged on such work. On the other hand, with regard to the outdoor work, it cannot be assumed that 352 women are doing the work of 360 men; here the work has been greatly reduced, the number of deliveries having decreased from six to three a day.

The women for the most part did good work; but, roughly

speaking, five women were needed in the place of four men: this was due either to lack of experience, or to the heaviness of the work. Men dealt with weights up to 35 lb., but the maximum for women was 26 lb., and it was, therefore, natural that more women than men should be required for a given amount of work. One other difficulty about the women was the extreme irregularity of the indoor staff. A reserve of thirty-eight girls was kept, so that it might always be possible to have enough workers to fill any gaps. The women were always staying away on some plea or another. The Postmaster attributed this to the fact that they came from rather a good class, were not dependent on their earnings, and often were only doing the work from patriotic motives. The outdoor staff, largely consisting of soldiers' wives, was much steadier.

The women earned from 22s. to 27s. a week, with a war bonus of 9s. They were all on time work, having an eight-hour day, with one hour off for meals.

The Postmaster did not think there would be much trouble about the women being thrown out of work when the war ended. Fifty-five women acting as telephone operators had been displaced by the installation of the automatic telephone. Care was taken to provide other work for them: out of the 55, only 14 accepted it. The Postmaster did not think the women had gone to other work; he thought they were glad that their war-job was over and that they could go home.

Transport Services: Tramways

Extent of Substitution.—Few occupations have been subject to so large an influx of women during the war as the tramway service.

NUMBER OF WOMEN EMPLOYED

	July, 1914.	April, 1918.	Increase.
Municipal Tramway Departments	1,200	18,800	17,600
Private Tramway Companies .	200	5,800	5,600
Omnibus Service . . .	300	4,300	4,000
Total . . .	1,700	28,900	27,200

(*a*) *Conductors.* Women conductors are now to be found all over the country; there is in many cases little scope for more substitution, it having reached its furthest limits (*e.g.*, in one large city, where 1,200 or 1,300 women conductors are being employed, there are only eight men conductors left).

(*b*) *Drivers.* It would be possible to employ more women as drivers; they have indeed been introduced in this capacity in comparatively few districts. In some towns it is said that the unions oppose the employment of women as drivers; or that the special conditions of the service make the work in some way unsuitable for women, as, for instance, the steepness of the gradient, the narrowness of the gauge, the height of the cars. Where the occupation is open to women it is not easy to secure an adequate supply of women to train for the work, as it is said that they need to be exceptionally strong in nerve and muscle.

(*c*) *Cleaners.* A considerable number of women are being employed as cleaners. The difficulty in this case is that the work is often night work, and there is some unwillingness to employ women at night. In one district it is reported that about 40 per cent. of the car-cleaners are women, but they are not employed at night. In other districts where the women are employed at night, very few men are retained as cleaners.

(*d*) *Inspectors.* The employment of women as inspectors began in the year 1917–1918. It aroused considerable opposition in some cities; the women conductors in at least one case threatened to strike if women inspectors were appointed. In two out of five cities giving returns, it was found that women were being employed as inspectors. It would be possible to employ more women in this way.

The following figures give an estimate of the total number of women employed in the Tramway Services under Local Authorities:

No. employed, July, 1914.	Percentage of total workers.	No. employed April, 1918.	Percentage of total workers.	No. said to be directly replacing men.
1,200	2	19,200	34	17,000

Facts as to the employment of women in the tramway service were obtained from Birmingham, Glasgow, Leeds, Rotherham, and

Sheffield. Over 5,000 women are now employed in these towns, almost all of them being substitutes for men, the number of women so occupied before the war having been small (*e.g.*, in two of the towns no women were employed before 1915; in another, 1,033 are now employed as against 18 in July, 1914).

It is difficult to say how far the substitution is complete. In several cases it is noted that the actual numbers of workers employed have increased since the war, but this is not necessarily due to the employment of women, as the service has become heavier in several cases, *e.g.*, the following facts were supplied from two towns—

Town.	No. employed before War.		No. employed, May, 1918.		Increase +, or decrease −, in No. employed.	
	Men.	Women.	Men.	Women.	Men.	Women.
A . .	1,684	18	1,152	1,033	− 532	+1,015
B . .	177	0	183	135	+ 5	+ 135

It is evident that in the case of B, since more men are employed than before the war, there is some additional pressure on the service causing the employment of more workers than before, and all those who have sent in reports emphasize the changes in the work. The women are all doing work of a kind hitherto only done by men; but the work having become heavier in consequence of war conditions, their labour is to some extent additional rather than substitutional.

Success of Replacement.—On the whole, women are said to do fairly well as conductors. The report from one city states that the women compare very unfavourably with the men, because, owing to the shortage of labour, the women cannot be selected with as much care as the men were before the war; when women were first employed, a good type of woman was secured, but this is impossible now, and their work is unsatisfactory. In two cases it was said that the women were bad time-keepers. This was attributed in one town to their domestic duties. It was generally agreed that the best of the women did very well; but an opinion was expressed in more than one case that with the present difficulties in the service and the long hours, the work was too great a strain on the

women. In one town it is said that, on an average, the women change over three times a year. Many give up the work after the first fortnight, a considerable number after three months; very few stand it for two years, and hardly any for longer. In this particular case there have been special difficulties, because the trams needed renewing when the war broke out, consequently many are awaiting repairs; those that remain in use are in bad condition, the traffic is heavy and difficult to arrange, split turns are common, and women have been known to be on duty for 69 hours one week and 68 the next. It is thought that with better trams and a reorganization of traffic, the women would do the work well.

A report was received only from one district where women were acting as drivers; 309 women were employed in this capacity on 1st May, 1918, as compared with 94 on the same day in 1917, 19 per cent. of the drivers being women. In addition, 85 women were being trained for the work. Some of these were said to be very capable, but, as noted before, exceptionally strong women are needed for the work. It is said that they are not any more cautious than men as drivers.

Wages

There has been a general attempt on the part of the unions to secure equal pay for women and men in the tramway service. The attempt has had a certain measure of success. The National Transport Workers' Federation secured an award in March, 1918, by which women as well as men, aged 18 years and upwards, were to receive £1 a week over pre-war rates in cases in which the women's terms of employment included an undertaking that they should be paid at the same rates as the men whom they replaced. When their terms of agreement did not include such a clause, the women's advances were to be increased by 4s. a week, subject to a maximum of 20s. a week over the pre-war rates. This award, applying on the one hand to members of the Transport Workers' Federation and on the other to the Municipal Tramways Association, the Tramways and Light Railways Association and the London General Omnibus Co., Ltd., did not quite meet the demands of the union, which were for an increase of £1 a week for men and women over pre-war rates, irrespective of any previous agreement about equal rates of pay.

The following figures were given for different districts—

CONDUCTORS' WAGES

District A—	Weekly rate on engagement	Maximum rate attained at end of	
Men	47/6 (27/6 wage, £1 bonus)	52/6 (32/6 wage, £1 bonus)	2½ years
Women	31/6 (27/6 wage, 4/- bonus)	43/6 (27/6 wage, 16/- bonus)	12 months
District B—			
Men	42/6 (22/6 wage, £1 bonus)	50/-(30/- wage, £1 bonus)	6 years
Women	35/3 (22/6 wage, 12/9 bonus)	42/9 (30/- wage, 12/9 bonus)	6 years
District C—	At end of 6 months' service		
Men	45/- (25/- wage, £1 bonus)	57/3 (31/3 wage, £1 bonus)	7½ years
Women	37/9 (25/- wage, 12/9 bonus)	44/- (31/3 wage, 12/9 bonus)	7½ years
District D—	Rate on engagement		
Men	51/2	59/10	6 years
Women	32/7	45/8	3 months
District E—			
Men	52/3	58/6	2nd year
Women	50/-	55/6	2nd year

It is only in the case of District E that the wages approach equality, though it will be noticed that in Districts B and C it is the bonus and not the wage that is different; while in District A the wages are equal at the beginning, but vary later: in this case, however, the women's bonus grows, while that of the men remains stationary. Wages in the first three districts are reckoned on a 60-hours' week, but as in A, at any rate, the hours often exceed this number, the actual weekly wage is frequently higher for men and women, the rates being reckoned at so much an hour. In D the hours are 54 a week, as compared with 51 before the war: the extra time hours are reckoned as time and a half. In E the women work 9 hours a day; at first they only worked 7, while the men worked 9, but at their own request they were put on to a 9-hour day, except in the very heavy wards. In D, women are employed as drivers, and receive 6d. a day more than the conductors. Car-cleaners in D receive 30s. on first being engaged for a week of 51 hours, and 33s. at the end of the second year.

The conductors' pay for women reaches its maximum more quickly than that for men in two of the cases noted: this is especially marked in D. An explanation of the rise is given in the report from this city, which states that many women left at the end of three months or so, took a holiday, and returned; they are now obliged to go back to the lower beginning wage if they break off after a few months' work. The difference in the pay (13s. 1d. a week) is, therefore, an inducement to the women to keep to the work. The difference between the minimum and maximum for men (8s. 8d.) is much less and spread over a much longer period.

Trade Unions

The women have joined the unions in large numbers, and have been encouraged to do so by the men. In two districts from which reports were received, it was said that 97 or 98 per cent. of the women employed had joined the union, all grades of women being eligible for membership; but they are not always admitted on the same terms as men (*e.g.*, in one district they are not eligible for the friendly society benefits, being only admitted to the Trade Protection section).

Prospects of Employment after the War

This exclusion of women from the friendly society benefits is no doubt due to the general conviction that women will not be retained in their new positions after the war. The union reporting on this point emphatically stated that they would not remain in the industry. In another district it is said that the women must be discharged by the agreement with the men's unions, and, in any case, the management has no wish to retain them, and that both the men and the public will be glad when they are dismissed. It may be noted that in this district the women's wages are nearly equal to those of the men, so that there would be little gain to the management in retaining them. In other districts, however, there appears to be some likelihood of the women continuing to be employed. Exceedingly interesting figures were supplied by Mr. Ashton from Sheffield showing the extreme frequency with which male tramway employees change their work in Sheffield. Returns received from 180 men employed on the tramways showed that they had followed 527 distinct occupations, or, on the average, 2·9 each. They came largely from other transport industries and from the skilled artisan class. Many had followed three or four different occupations before entering the tramway service. Consequently, in Sheffield at any rate, returned tramway men would, as a rule, have various occupations to choose from, and might leave that service to women to some extent. At the same time, it has been already noted that in another district women leave the service very quickly, and this, making vacancies which the men can easily enter, may have the effect of excluding women in a short space of time.

No general opinion is or can be expressed on the subject, but

if the shortening of hours and improvement of conditions for which the trade unions are pressing are brought about, there may be scope for women in what would then be entirely suitable work.

Railways

Before the war, such women as were employed by the railways were chiefly engaged on clerical work; since July, 1914, the numbers of women employed on the railways have increased from 12,000 to 65,000, almost all the additional women being engaged on work formerly done by men.

The following facts were given by a railway with regard to the women employed—

	Before the War.	May, 1917.	May, 1918.
Total number employed	733	2,299	2,973
Particulars of Employment—			
Carriage Cleaners	58	196	238
Porters, Goods	–	114	162
,, Passenger	–	170	264
,, Parcel	–	–	65
,, Total	–	— 284	— 491
Ticket Collectors	–	81	107
Booking and Parcel Clerks	–	207	265
Coaching Department	175	943	1,229
Goods and Mineral Train Working Department	.	–	12

With regard to the success of the women's work, it was said that, on the whole, it was satisfactory; but, generally speaking, three women were required in the place of two men, especially when manual labour was performed. Female goods porters were not found so capable of handling heavy articles as the male staff, and consequently more assistance had to be given to them. The women gained in efficiency with length of service. Their time-keeping was generally good.

No alteration in the methods employed was found necessary; but in the case of women employed in the locomotive workshops, the overtime is limited by statute, whereas there is no restriction in the case of men. Women were being employed on night work

to a limited extent as goods porters, telegraph operating clerks, and carriage cleaners.

Wages were paid as follows—

Carriage Cleaners (internal) .	14s. per week.
,, ,, (external) .	15s. ,, ,,
Goods Porters . . .	19s. to 22s. per week, being the minimum rates paid to the male staff.
Passenger Porters . .	18s. per week (minimum rate for men).
Ticket Collectors . .	14s. to 20s. per week (minimum rates for men).
Booking Clerks . . .	£20 to £70 per annum, these rates being slightly lower than those paid to men doing the same work.

In all cases, an additional war wage is paid of—

12s. 6d. a week to workers of 18 and over.
6s. 3d. ,, ,, under 18.

TABLE I

NUMBER AND PERCENTAGE OF WOMEN ENGAGED IN VARIOUS OCCUPATIONS AT DIFFERENT DATES

NOTE.—In all Tables workers are classified under the heading of the firms by which they are employed. Consequently women engaged on clerical work, for instance, are included in every industrial group. Also firms are classified according to their principal product, though they are often engaged in several trades.

OCCUPATIONS.	JULY, 1914.			NOVEMBER, 1918.			APRIL, 1919.		
Industries.	Numbers employed.		Percentage of Females to total Workers.	Numbers employed.		Percentage of Females to total Workers.	Numbers employed.		Percentage of Females to total Workers.
	Males.	Females.		Males.	Females.		Males.	Females.	
Building	920,000	7,000	0·8	438,000	31,000	6·7	591,000	14,000	2·4
Mines and Quarries	1,266,000	7,000	0·5	1,039,000	13,000	1·2	1,223,000	12,000	·97
Metal Industries	1,634,000	170,000	9·4	1,872,000	596,000	24·1	1,908,000	300,000	13·8
Chemical Industries	159,000	40,000	20·1	161,000	103,000	39·0	176,000	69,000	28·1
Textile Industries	625,000	863,000	58·0	408,000	819,000	66·7	459,000	798,000	63·5
Clothing Industries	287,000	612,000	68·1	181,000	559,000	75·5	223,000	569,000	71·8
Food, Drink, and Tobacco Industries	360,000	196,000	35·2	247,000	230,000	48·3	300,000	247,000	45·1
Paper and Printing Industries	261,000	148,000	36·1	158,000	141,000	47·2	201,000	143,000	41·7
Wood Industries	258,000	54,000	14·1	173,000	83,000	32·5	220,000	68,000	23·6
Other Industries	393,000	89,000	18·5	252,000	151,000	37·5	304,000	134,000	30·5
Total Industries (under private ownership)	6,163,000	2,176,000	26·1	4,929,000	2,726,000	35·6	5,605,000	2,354,000	29·6
Gas, Water, and Electricity (under Local Authorities)	63,000	1,000	·94	53,000	5,000	9·1	62,000	3,000	4·6
Government Establishments (Dockyards, Arsenals, Factories, etc.)	76,000	2,000	2·6	276,000	246,000	47·1	172,000	40,000	18·9
Total Industries and Municipal and Government Establishments	6,302,000	2,179,000	25·7	5,258,000	2,977,000	36·1	5,839,000	2,397,000	29·1
Agriculture (permanent labour) in Great Britain	800,000	80,000	9·1	578,000	95,000	14·1	630,000	89,000	12·3
Transport.									
Railways[1]	660,000	12,000	1·8	546,000	66,000	10·8	641,000[1]	50,000[1]	7·3
Docks and Wharves and other Transport under Private Ownership	444,000	5,000	1·4	275,000	30,000	13·0	351,000	23,000	8·1
Tramways under Local Authorities	57,000	1,000	2·1	37,000	19,000	34·1	52,000	12,000	18·9
Total Transport	1,161,000	18,000	1·5	858,000	115,000	11·9	1,044,000	85,000	7·5
Finance and Commerce.									
Banking and Finance	176,000	10,000	5·1	100,000	75,000	42·8	130,000	72,000	35·8
Commerce	1,225,000	496,000	28·8	746,000	880,000	54·1	928,000	829,000	47·2
Total Finance and Commerce	1,401,000	506,000	26·5	846,000	955,000	53·0	1,058,000	901,000	46·0
Professional Occupations (employed persons; *i.e.*, except in case of hospitals; mostly Clerks)	127,000	50,000	28·4	69,000	120,000	63·6	89,000	92,000	50·8
Hotels, Public Houses, Cinemas, Theatres	199,000	181,000	47·6	116,000	222,000	65·6	143,000	237,000	62·3
Civil Service.									
Post Office	189,000	61,000	24·3	109,000	121,000	52·7	135,000	106,000	44·1
Other Civil Service	55,000	5,000	9·0	87,000	113,000	56·5	96,000	106,000	52·4
Total Civil Service	244,000	66,000	21·3	196,000	234,000	54·5	231,000	212,000	47·9
Local Government, including Education, but excluding Municipal Tramways, Gas, Water, and Electricity (*shown above*)	376,000	196,000	34·3	251,000	229,000	47·6	319,000	220,000	40·8
Grand Total for Occupations given above	10,610,000	3,276,000	23·6	8,172,000	4,947,000	37·7	9,353,000	4,232,000	31·2

[1] Information with regard to Railways in April, 1919, is scanty and the figures should be regarded as rough estimates only.

TABLE II

TABLE SHOWING INCREASE OR DECREASE IN NUMBER OF WOMEN EMPLOYED ACCORDING AS NUMBER OF MEN HAD INCREASED OR DECREASED IN CORRESPONDING OCCUPATIONS

GROUP I.—OCCUPATIONS IN WHICH THE NUMBER OF MEN AS WELL AS THE NUMBER OF WOMEN INCREASED FROM JULY, 1914–NOVEMBER, 1918

	JULY, 1914.		NOVEMBER, 1918.				APRIL, 1919.					
	Number employed.		Males.		Females.		Males.			Females.		
	Males.	Females.	Number employed.	Increase or decrease on July, 1914.	Number employed.	Increase or decrease on July, 1914.	Number employed.	Increase or decrease on July, 1914.	Increase or decrease on Nov., 1918	Number employed.	Increase or decrease on July, 1914.	Increase or decrease on Nov., 1918.
Metal Trades (excepting engineering other than marine and electrical and construction of vehicles other than cycles, motors, and aeroplanes)	1,173,000	158,000	1,455,000	+ 282,000	482,000	+ 324,000	1,445,000	+ 272,000	– 10,000	264,000	+ 106,000	– 219,000
Chemical Trades—(a) Heavy Chemicals; (b) Explosives; (c) Tar Distilling; (d) Chemicals for Textiles and other Trades and Dyes	62,000	5,000	81,000	+ 19,000	36,000	+ 31,000	76,000	+ 14,000	– 5,000	11,000	+ 6,000	– 25,000
Government Establishments—Factories, Dockyards, Arsenals, etc.	76,000	2,000	276,000	+ 200,000	246,000	+ 244,000	172,000	+ 96,000	– 104,000	40,100	+ 38,000	– 205,000
Totals	1,311,000	165,000	1,812,000	+ 501,000	764,000	+ 599,000	1,693,000	+ 382,000	– 119,000	315,000	+ 150,000	– 449,000

GROUP II.—OCCUPATIONS IN WHICH THE NUMBER OF MEN DECREASED WHILE THE NUMBER OF WOMEN INCREASED FROM JULY, 1914–NOVEMBER, 1918

Building Trades	920,000	7,000	438,000	– 482,000	31,000	+ 24,000	591,000	– 329,000	+ 153,000	14,000	+ 7,000	– 17,000
Mines and Quarries	1,266,000	7,000	1,039,000	– 227,000	12,000	+ 5,000	1,223,000	– 43,000	+ 184,000	12,000	+ 5,000	–
Metal Trades—(a) Engineering other than electrical and marine	399,000	11,000	367,000	– 32,000	103,000	+ 92,000	409,000	+ 9,000	+ 41,000	33,000	+ 22,000	–
(b) Construction of vehicles other than cycles, motors, and aeroplanes	62,000	2,000	50,000	– 12,000	11,000	+ 10,000	55,000	– 7,000	+ 5,000	4,000	+ 3,000	– 8,000
Chemical Trades, excepting those covered in Group I	97,000	35,000	81,000	– 17,000	68,000	+ 33,000	100,000	+ 3,000	+ 20,000	58,000	+ 23,000	– 10,000
Textile Trades—(a) Woollen and Worsted	134,000	170,000	105,000	– 29,000	175,000	+ 5,000	119,000	– 15,800	+ 14,000	179,000	+ 9,000	+ 4,000
(b) Hosiery	20,000	60,000	15,000	– 5,000	68,000	+ 8,000	18,000	– 2,000	+ 3,000	68,000	+ 8,000	+ 100
(c) Textile Dyeing and Bleaching	95,000	24,000	72,000	– 23,300	31,000	+ 6,000	76,000	– 19,000	+ 5,000	27,000	+ 3,000	– 4,000
(d) Silk	11,000	22,000	8,000	– 3,000	22,000	+	10,000	– 1,000	+ 2,000	23,000	+ 1,000	+ 1,000
(e) Miscellaneous Textiles	28,000	46,000	23,000	– 5,000	55,000	+ 9,000	24,000	– 4,000	+ 1,000	49,000	+ 3,000	– 5,000
Clothing Trades, Boots, Shoes, and Slippers	110,000	56,000	76,000	– 34,000	68,000	+ 12,000	93,000	– 17,000	+ 17,000	67,000	+ 12,000	–
Food Trades	360,000	196,000	246,000	– 114,000	231,000	+ 35,000	300,000	– 60,000	+ 54,000	247,000	+ 51,000	+ 16,000
Paper Trades—Paper and Wallpaper	40,000	17,000	28,000	– 12,000	21,000	+ 4,000	32,000	– 8,000	+ 4,000	18,000	+ 1,000	– 3,000
Wood Trades	258,000	44,000	173,000	– 85,000	83,000	+ 39,000	220,000	– 38,000	+ 47,000	68,000	+ 24,000	– 15,000
Bricks and Cement	100,000	5,000	40,000	– 60,000	8,000	+ 3,000	53,000	– 47,000	+ 13,000	7,000	+ 2,000	– 1,000
Leather Trades	67,000	17,000	48,000	– 19,000	37,000	+ 20,000	57,000	– 10,000	+ 8,000	32,000	+ 15,000	– 5,000
Other Trades	226,000	67,000	164,000	– 62,000	105,000	+ 38,000	195,000	– 31,000	+ 31,000	95,000	+ 27,000	– 11,000
Gas, Water, and Electricity under Local Authorities	63,000	1,000	53,000	– 10,000	5,000	+ 5,000	62,000	– 1,000	+ 9,000	3,000	+ 2,000	– 2,000
Totals	4,256,000	787,000	3,026,000	–1,231,000	1,134,000	+ 348,000	3,637,000	– 620,000	+ 611,000	1,004,000	+ 218,000	– 130,000

GROUP III.—OCCUPATIONS IN WHICH THE NUMBER OF BOTH MEN AND WOMEN DECREASED BETWEEN JULY, 1914 AND NOVEMBER, 1918

Textile Trades—(a) Cotton	274,000	415,000	144,000	– 130,000	349,000	– 66,000	168,000	– 106,000	+ 24,000	345,000	– 71,000	– 5,000
(b) Jute	16,000	35,000	11,000	– 5,000	35,000	–	12,000	– 4,000	+ 1,000	32,000	– 3,000	– 3,000
(c) Linen	29,000	70,000	22,000	– 7,000	67,000	– 3,000	20,000	– 9,000	– 1,000	59,000	– 11,000	– 8,000
(d) Lace	18,000	21,000	9,000	– 9,000	18,000	– 3,000	11,000	– 7,000	+ 1,000	17,000	– 4,000	–
Clothing Trades other than Boot, Shoe, and Slipper	177,000	556,000	105,000	– 72,000	490,000	– 66,000	130,000	– 47,000	+ 25,000	501,000	– 55,000	+ 11,000
Paper Trades other than Paper and Wallpaper	221,000	130,000	130,000	– 91,000	120,000	– 10,000	169,000	– 52,000	+ 39,000	125,000	– 5,000	+ 5,000
Totals	735,000	1,227,000	421,000	– 314,000	1,079,000	– 148,000	510,000	– 225,000	+ 89,000	1,079,000	– 149,000	
Grand Total for Groups I, II, III	6,302,000	2,179,000	5,259,000	–1,044,000	2,977,000	+ 798,000	5,840,000	– 463,000	+ 581,100	2,398,000	+ 219,000	– 579,000

PERCENTAGE OF WOMEN TO TOTAL NUMBER OF WORKERS IN GROUPS GIVEN ABOVE

	July, 1917	Nov. 1918	April, 1919
GROUP I	11%	29%	15%
GROUP II	15%	27%	22%
GROUP III	62%	71%	67%

V. THE POSITION OF WOMEN IN INDUSTRY: JULY, 1914—APRIL, 1919

DURING the twelve months from April, 1918, to 1919, many interesting documents on the subject of women in industry have been published by different Government departments. The report of the War Cabinet Committee, the Home Office report, and the figures published by the Industrial (War Inquiries) Branch of the Board of Trade give far more precise and authoritative information than can be secured by any private inquiry. The report this year is therefore confined to tabular reports gathered from figures hitherto unpublished, supplied by the Industrial War Inquiry Branch of the Board of Trade, giving a brief summary of what has happened from July, 1914, to November, 1918; and from November, 1918, to April, 1919.

The industrial changes following the Armistice, complicated as they have been by the payment of unemployment benefit, and by doubts as to the form and effect of the Pre-War Practices Bill, have been too numerous and are too recent for it to be possible to see what permanent effect the employment of women during the war will have on their employment in the future. In some directions, the pendulum has swung back very far. Cases are quoted of women who are now excluded from work which they did before the war, on the ground that it is men's work.

In the more purely industrial occupations (*cf.* Table I), the decrease in the number of women employed has been rapid. Between July, 1914, and November, 1918, 798,000 women were added to the number of those formerly engaged in these industries; by April, 1919, the number had diminished by 579,000 (*i.e.*, by 72 per cent. of the increase). In the same industries, the number of men diminished by 1,044,000 between July, 1914, and November, 1918; but by April, 1919, the decrease in the number of men was reduced to 463,000. In other words, 579,900 women went out of these industries and 681,000 men were restored to them between November, 1918, and April, 1919. As a result, it will be seen that the percentage of women to the total numbers of workpeople was only 3·4 higher in April, 1919, than it had been in July, 1914;

although it had risen by 10·4 between July, 1914, and November, 1918. Having fallen so swiftly, it seems possible that it may presently attain the pre-war level.

In considering the swift withdrawal of women from industry since November, 1918, something may be gained by noting where it has chiefly occurred. This can best be done by referring to Table II, which shows where the greatest increase took place during the war: out of the total addition of 798,000 women, 598,000, or 75 per cent., belong to Group I; out of the total decrease of 579,000, 449,000 or 77 per cent. belong to the same group. This group represents additional rather than substitutional labour: it shows industries in which the number of men as well as the number of women rose from July, 1914, to November, 1918; and in which, taken as a whole, there has been a decline not only in the number of women, but in the number of men employed since the Armistice. A slightly larger percentage of the decrease than of the increase belongs to this group, but the two correspond closely. It is clear from this table that in purely industrial occupations the great impetus to the employment of women came chiefly from a war demand, and that it is with the cessation of that demand that their employment is rapidly lessening. Though largely engaged in work which would normally have been done by men, they were not to any great extent taking men's places; neither have they been much displaced by men, though men have been retained in preference to women.

In the second group, in which the number of men diminished during the war by 1,230,000, that of women increased by the comparatively small number of 348,000; and the return of 611,000 men by the end of April had only displaced 130,000 women. In the third group, in which the number of both men and women had declined during the war, there was a further slight decrease in the number of women employed after the Armistice. This decrease was obviously not due to the women being displaced by men so much as to the difficult conditions prevailing in various sections of the textile trades; and it will be noticed that in the linen trade, in which the number of women declined more seriously than in any other trade in this group, the number of men employed also lessened. Shortage of material in some instances, faltering and uncertain markets in others, have been responsible for the

diminution in employment among women in the third group, though where the number of men rose and that of women fell, displacement no doubt took place. These industries should, however, be able to reabsorb the women, given that the cotton and lace export trades revive, and that supplies of flax, curtailed by the difficulties in Russia, are obtainable. There are complaints as to the high price of labour and the difficulty of meeting outside competition in some of the textile trades: for instance, it is stated that in the jute industry it is impossible for Dundee firms—which have given their workers a rise of from 125 to 150 per cent. in wages since July, 1914—to compete with firms in Calcutta, where wages have risen by only 10 per cent. In all the textile industries mentioned in Group III, there is a considerable amount of plant standing idle.

Returning to Group II, in which the return of the men rather than any influence affecting the demand for the product or the supply of raw material appears to have been the most potent factor sending the women out of industry, it will be seen that more than half the diminution has occurred in engineering other than electrical and marine. The number of men employed is higher than in July, 1914, as is that of women. Thus there has apparently been an extension in the trade as a whole, though the employment of women declined as rapidly after the Armistice.

In the other occupations in Group II, it is shown that there is, for the most part, curiously little relation between the return of men and the withdrawal of women. To the building trades, and mines and quarries, many men have returned; indeed, more than half the returned men in this group have come back to these industries, while few women have left them, it having been possible to substitute women for men to a small extent only during the war. In the food trades, there has been a great extension of the employment of women since the Armistice, though men have returned to these trades in greater numbers than to any others, except mining and building. These trades, cramped during the war, have rapidly expanded since the Armistice, the total number of workers employed in April, 1919, being not far short of the pre-war level, but this expansion has only been possible by maintaining a proportion of women to total workers much higher than the pre-war one. More detailed figures given by the Board of

Trade show that the increase in the number of women employed in these trades since the Armistice has been most marked in the cocoa, confectionery, and fruit-preserving industries and in the butter, cheese, and margarine industries. Men have returned to these industries in considerable numbers; but the group which has reabsorbed more men than any other is that of brewing and malting, in which, owing to the heavy nature of the work, the proportion of men to women had always been high and in which the number of women employed since the Armistice has diminished.

Other trades in Group II from which women have disappeared in considerable numbers since the Armistice are the wood and leather trades. They had entered both in great numbers during the war, and men have been coming back rapidly into the wood trades. The leather trades, on the other hand, appear to have contracted since the Armistice, the disappearance of women not being numerically balanced by the return of men, though it may be remarked that in these industries it was generally said that more than one woman was needed in the place of one man.

The figures given in these tables do not definitely deal with women who have acted as substitutes for men. They only show the numbers of women drawn into or disappearing from particular trades, and in particular processes throughout industry there has been far more displacement of women by men than is shown by the tables. Women have gone back to processes which were classified as women's work before the war in the trades in which they had been temporarily employed on men's work. A large worsted firm in the West Riding of Yorkshire, for instance, which during the war employed several women as overlookers, selecting suitable women from among its former workers, has already displaced all the women overlookers, but is employing the same women on the work they did before the war. No official figures are given as to the extent to which this is happening. Again in Group III the diminution in the number of women employed during the war was consistent with the employment of women in the place of men to a marked degree. Women were not only drawn from these industries into others to do men's work, but were retained in them for the same purpose. Table I, which gives the proportion of women to total workers employed in July, 1914, November, 1918, and April, 1919, gives more idea of the actual

substitution which took place during the war and of the extent to which it was diminished since the Armistice.

Table III shows the relative increase or decrease among males and females over and under 18 from November, 1918, to April, 1919, in industrial undertakings and municipal and Government establishments. It will be seen that boys as well as women have been leaving industry since the Armistice.

TABLE III

	November, 1918.		April, 1919.			
	Number Employed.	Percentage of Total Workers.	Number Employed.	Percentage of Total Workers.	Increase or Decrease on No. employed, since Nov., 1918.	
					Number.	Percentage
			Group I.	Males.		
Men over 18 . .	4,333,000	82·4	4,973,000	85·2	+ 640,000	+ 14·7
Boys under 18 . .	925,000	17·6	866,000	14·8	- 59,000	- 6·3
Total Male workers .	5,251,000	100·0	5,839,000	100·0	+ 589,000	+ 11·0
			Group II.	Females		
Women over 18 . .	2,325,000	78·1	1,785,000	74·5	- 539,400	- 23·2
Girls under 18 . .	652,000	21·9	612,000	25·5	- 40,000	- 6·1
Total Female Workers .	2,977,000	100·0	2,397,000	100·0	- 579,000	- 19.5

The decline among women has been far more marked than that among girls, no doubt because the increase during the war and the decrease since it ended occurred chiefly in industries in which women had not been normally employed in large numbers; these industries were largely recruited from among married women, as was shown in the report for 1917–1918; and many of them, owing to the heavy nature of the work, necessitated the employment of adults rather than young people.

Table IV shows the percentage changes in industrial occupations for men and women between November, 1918, and April, 1919, and Table V the percentage changes between July, 1914, November, 1918; and April, 1919. The great increase in the employment of women in the making of aeroplanes is the most notable feature in Table V; and it will be seen that this increase has not been reduced so rapidly as that in the other groups which showed a great increase in November, 1918. At the same time, reports from aeroplane works show that the work on which women are for the most part engaged is of a kind which would naturally

be done by them—sewing, etc. This industry will no doubt give great scope for the employment of women as well as men in the future.

Turning from the more strictly industrial occupations, we find that there were 4,947,000 women engaged in all occupations (given in Table I) in November, 1918, as compared with 3,276,000 in July, 1914—an increase of 1,671,000. Of these additional women, 872,500 (52 per cent.) were drawn into agriculture, transport, finance and commerce, the Civil Service, professional, and other

TABLE IV

EMPLOYMENT IN NOVEMBER, 1918, AND APRIL, 1919: ESTIMATED NUMBERS EMPLOYED AND PERCENTAGE CHANGES

MALES.

OCCUPATION.	Numbers Employed in		% Change Between Nov., 1918, & April, 1919.
	Nov., 1918.	April, 1919.	
Industries (under private ownership)			
Building	438,000	591,000	+ 34·8
Mines and Quarries	1,039,000	1,223,000	+ 17·7
Metals	1,872,000	1,908,000	+ 1·9
Chemicals	161,000	176,000	+ 9·1
Textiles	408,000	459,000	+ 12·3
Clothing	181,000	223,000	+ 22·9
Food, Drink, and Tobacco	247,000	300,000	+ 21·8
Paper and Printing	158,000	201,000	+ 27·1
Wood	172,000	220,000	+ 27·4
Other Industries	252,000	304,000	+ 21·0
Total Industries	4,929,000	5,605,000	+ 13·7
Gas, Water, and Electricity under Local Authorities	53,000	62,000	+ 16·8
Government Establishments, Dockyards, Arsenals, National Factories, etc.	276,000	172,000	− 37·7
TOTAL INDUSTRIES AND MUNICIPAL AND GOVERNMENT ESTABLISHMENTS	5,258,000	5,839,000	+ 11·0

In the corresponding trade there was an organized stoppage of certain mills for a fortnight in April which does not appear in the figures, since it was over by the date to which they relate.

TABLE IV (CONTINUED)

EMPLOYMENT IN INDUSTRY IN NOVEMBER, 1918, AND APRIL, 1919: ESTIMATED NUMBERS EMPLOYED AND PERCENTAGE CHANGES.

FEMALES.

OCCUPATION.	Numbers Employed in		% Change Between Nov., 1918, & April, 1919.
	Nov., 1918.	April, 1919.	
Industries. (under private ownership).			
Building	31,000	14,000	– 54·5
Mines and Quarries	12,000	12,000	– 4·0
Metals	596,000	300,000	– 49·6
Chemicals	103,000	69,000	– 33·0
Textiles	819,000	798,000	– 2·5
Clothing	559,000	569,000	+ 1·8
Food, Drink, and Tobacco	231,000	247,000	+ 7·1
Paper and Printing	141,000	143,000	+ 1·5
Wood	83,000	68,000	– 18·3
Other Industries	151,000	134,000	– 11·2
TOTAL INDUSTRIES	2,726,000	2,354,000	– 13·7
Gas, Water, and Electricity under Local Authorities	5,000	3,000	– 42·3
Government Establishments, Dockyards, Arsenals, National Factories, etc.	246,000	40,000	– 83·7
TOTAL INDUSTRIES AND MUNICIPAL AND GOVERNMENT ESTABLISHMENTS	2,977,000	2,397,000	– 19·5

occupations. It would seem that in these occupations the tendency for the women to disappear after the Armistice was far less strong than in the more industrial occupations. Men have been released from the Army more quickly for industrial than for other work; the efforts of the trade unions to get rid of the women who have taken men's places have for the most part been more vigorous in the more industrial occupations. For instance, the secretary of the Tramway Union in one large town stated in July, 1919, that not a single woman had yet been dismissed except when employed on nightwork; the women are said not to stay long enough in this occupation to make their dismissal necessary. Places have been found not only for all the conductors who have returned, but for a good many discharged soldiers who were not

employed on the trams before the war. The secretary thought that it might be necessary to urge the dismissal of any women who remained in a few months' time, not to make room for former

TABLE V

STATE OF EMPLOYMENT IN INDUSTRY IN NOVEMBER, 1918, AND APRIL, 1919, AS COMPARED WITH JULY, 1914, THE MORE IMPORTANT TRADES BEING SHOWN SEPARATELY.

OCCUPATION.	MALES.			FEMALES.		
	Numbers employed in	% Expansion (+) or Contraction (−) since July, 1914, up to		Numbers employed in	% Expansion (+) or Contraction (−) since July, 1914, up to	
	July, 1914.	Nov., 1918	Apr., 1919.	July, 1914.	Nov. 1918	Apr., 1919.
Building	920,000	− 52·4	− 35·8	7,000	+ 348·0	+ 104·0
Mines and Quarries	1,266,000	− 18·0	− 3·4	7,000	+ 78·6	+ 71·4
Iron and Steel	279,000	+ 11·1	+ 26·9	3,000	+1,124·2	+ 365·0
Engineering	400,000	− 8·0	+ 2·2	11,000	+ 862·4	+ 209·0
Electrical Engineering	80,000	+ 11·6	+ 18·4	17,000	+ 234·3	+ 114·5
Marine Engineering, Shipbuilding	289,000	+ 50·4	+ 57·3	2,000	+1,238·0	+395·0
Cycles and Motors, Aeroplanes	122,000	+ 22·5 + 898·0	+ 13·6 + 617·8	11,000	+ 705·0	+207·0
Construction of other Vehicles	62,000	− 19·0	− 10·7	2,000	+ 660·0	+ 160·0
TOTAL METAL TRADES[1]	1,634,000	+ 14·6	+ 16·8	170,000	+ 250·0	+ 76·7
TOTAL CHEMICALS	159,000	+ 1·4	+ 10·7	40,000	+ 158·0	+ 71·9
Cotton	274,000	− 47·5	− 38·6	415,000	− 15·8	− 17·0
Woollen and Worsted	134,000	− 21·6	− 11·0	170,000	+ 2·7	+ 5·3
Jute	16,000	− 32·5	− 25·6	35,000	− 0·3	− 8·9
Linen	29,000	− 25·5	− 30·0	70,000	− 4·1	− 16·2
Hosiery	20,000	− 23·5	− 9·5	60,000	+ 13·0	+ 13·4
Textile Dyeing and Bleaching	95,000	− 24·5	− 19·7	24,000	+ 27·1	+ 11·3
Silk	11,000	− 27·3	− 9·1	22,000	+ 0·4	+ 4·1
Lace	18,000	− 47·8	− 40·6	21,000	− 17·2	− 18·6
TOTAL TEXTILE TRADES[1]	625,000	− 34·7	− 26·6	863,000	− 5·2	− 7·5
Boots and Shoes	110,000	− 30·9	− 15·8	56,000	+ 21·8	+ 20·6
TOTAL CLOTHING TRADES[1]	287,000	− 36·9	− 22·4	612,000	− 8·7	− 7·1
TOTAL FOOD TRADES	360,000	− 31·5	− 16·6	196,000	+ 17·6	+ 25·9
Paper and Wallpaper	40,000	− 31·0	− 20·5	18,000	+ 21·7	+ 5·2
TOTAL PAPER TRADES[2]	261,000	− 39·5	− 23·1	148,000	− 4·1	− 2·8
TOTAL WOOD TRADES	258,000	− 33·1	− 14·7	44,000	+ 88·8	+ 54·3
Bricks and Cement	100,000	− 60·0	− 47·1	5,000	+ 55·8	+ 38·4
Leather	67,000	− 28·8	− 15·5	17,000	+ 117·6	+ 88·4
Other Trades	226,000	− 27·6	− 13·8	67,000	+ 56·4	+ 40·6
GRAND TOTAL (Industry under private ownership)	6,163,000	− 20·0	− 9·1	2,176,000	+ 25·2	+ 8·2

[1] Including some not specified separately.
[2] Including Printing and Stationery.

employees of the tramway company, but for more discharged soldiers formerly employed in other occupations, because public opinion in favour of their employment was likely to be strong.

It seems, likely however, that in various branches of clerical work, women may retain their places. Prophecy is, however,

more futile than usual at the moment. Industrial changes of great magnitude are taking place, and it is impossible to consider the question of the future of women in industry apart from them. The general shortening of hours should bring about a general shifting of labour, male and female, to occupations for the product and services of which the demand is inelastic. Improvements in labour-saving devices may counteract this tendency. Meanwhile, difficulties in securing raw material, general industrial unrest, increases in wages introduced suddenly in many cases and with little or no relation to the general level of wages, affect the volume of employment in different occupations. Any difficulty experienced by men in obtaining work will act against the retention of women, for the claim of the returned soldier is strong and rouses quick sympathy. Much, as far as women are concerned, depends, therefore, on the extent to which men are absorbed into industry in the near future.

SECTION II

BANKING, CURRENCY, WAR FINANCE, ETC.

By A. H. Gibson (*of Harrogate*)

In the following pages a brief review is given of the course of Banking, Currency, the Foreign Exchanges, and War Finance for the past two years, the various tables being in continuation of those appearing in the previous report of the Research Committee appointed by the British Association for the Advancement of Science to investigate the effects of the war on Credit, Currency, and Finance. The review concludes with a short chapter on the growth and economic evils of inflation.

VI. The Banking Position

The banks during the past two years have not had to meet the extreme conditions they experienced during the first three years of war, but nevertheless there has been a further considerable expansion in bank credit, mainly on Government Account, and *per contra*, of necessity, in customers' deposits. Instead of the Government making greater use of the weapon of taxation and instituting a system of compulsory loans, it has chosen during the past two years, as during the first three years of war, the greater evil of paying for part of the goods and services it required for the prosecution of the war by an expansion in bank credit. The economic evils inevitably following in the wake of this vicious system of war finance were dealt with at considerable length in the Report of the Research Committee, to which reference has already been made. They are also alluded to in the special chapter on Inflation, given hereafter. All that need be repeated here is that when banks, on behalf of the Government, credit customers who have supplied goods and services for the prosecution of the war, they increase the available purchasing power of the community at a time when there is a great scarcity of goods and services for civilian consumption. The inevitable then happens—a rapid rise in prices, to be followed later by discontent and labour troubles. The procedure by which banks, in net effect,

have credited customers on behalf of the Government has been briefly as follows—

The banks have subscribed to War Loans, Exchequer Bonds, Treasury Bills, and other forms of Government loans. They have also made loans to the Government, repayable at short notice, through the intermediary of the Bank of England. Whatever the form of subscription has been, the banks have instructed the Bank of England to transfer from their balances kept at that Institution the amount of their subscriptions to Government Account. The Government has almost immediately drawn on the amounts so transferred to its account by issuing drafts made payable to manufacturers and others who have supplied it with goods and services for the prosecution of the war. The drafts have later mainly been paid into the joint stock banks, credited to the clearing balances of such banks at the Bank of England, and debited to public accounts. The net effect of such transfers and re-transfers is obviously that the banks have credited customers on Government account in return for a sheaf of Government securities bearing various rates of interest.

The great economic distinction between the Government in war time and the public in peace time obtaining grants of credit from the banks is that the former uses the grant in order to obtain and consume goods and services for the destructive purposes of war; but the latter in order to increase productive power and the available supply of goods at the disposal of the community in the future. So long as a *pro rata* increase in the supply of available goods follows an expansion in bank credit, there will, generally speaking, be no permanent increase in the general level of commodity prices.

(*a*) Bank of England

A comparison of the Bank of England Weekly Return dated 30th July, 1919, with that dated 1st August, 1917, discloses the following changes—

(1) The Bank of England Note Circulation (notes issued by Issue Department less notes in Banking Department) increased by £38,910,845.

(2) The amount of Gold Coin and Bullion in the Issue Department increased by £36,385,635.

(3) Public Deposits decreased by £26,930,730 and Other Deposits by £12,189,496. The Total Deposits, therefore, decreased by £39,120,226.

(4) Government Securities in the Banking Department decreased by £7,295,855, and Other Securities by £28,909,302. The Total Securities, therefore, decreased by £36,205,157.

(5) The Reserve of the Banking Department (Notes, Gold and Silver coin) decreased by £2,952,019. The Reserve on 1st August, 1917, represented 18 per cent. of the total deposit liabilities. On 30th July, 1919, it represented 20 per cent., a rise of two points.

There were no changes in the Bank Rate during the last two years, which remained at 5 throughout the period.

The position of the Bank of England at yearly intervals since 6th August, 1913, is shown in the tables given below. Comparing the Weekly Return dated 30th July, 1919, with the one dated 22nd July, 1914 (just before the war), the changes in the various items making up the return are as follows—

BANK OF ENGLAND

Issue Department

At	Notes Issued.	Total.	Government Debt.	Other Securities.	Gold Coin and Bullion.	Total.
	£	£	£	£	£	£
Aug. 6, 1913 –	55,970,030	55,970,030	11,015,100	7,434,900	37,520,030	55,970,030
July 22, 1914 –	57,014,410	57,014,410	11,015,100	7,434,900	38,564,410	57,014,410
July 29, 1914 –	55,121,405	55,121,405	11,015,100	7,434,900	36,671,405	55,121,405
Aug. 5, 1914 –	44,491,070	44,491,070	11,015,100	7,434,900	26,041,070	44,491,070
Aug. 4, 1915 –	79,657,775	79,657,775	11,015,100	7,434,900	61,207,775	79,657,775
Aug. 2, 1916 –	71,360,195	71,360,195	11,015,100	7,434,900	52,910,195	71,360,195
Aug. 1, 1917 –	68,295,650	68,295,650	11,015,100	7,434,900	49,845,650	68,295,650
July 31, 1918 –	85,012,730	85,012,730	11,015,100	7,434,900	66,562,730	85,012,730
July 30, 1919 –	104,681,285	104,681,285	11,015,100	7,434,900	86,231,285	104,681,285
Increase since July 22, 1914	47,666,875	47,666,875	—	—	47,666,875	47,666,875

Banking Department

At	Proprietor's Capital.	Rest.	Public Deposits.	Other Deposits.	7-Day and Other Bills	Total.
	£	£	£	£	£	£
Aug. 6, 1913 –	14,553,000	3,512,457	9,350,113	39,822,865	13,734	67,252,169
July 22, 1914 –	14,553,000	3,446,453	13,735,393	42,185,297	14,796	73,934,939
July 29, 1914 –	14,553,000	3,491,756	12,713,217	54,418,908	10,969	85,187,850
Aug. 5, 1914 –	14,553,000	3,547,083	11,499,452	56,749,610	10,312	86,359,457
Aug. 4, 1915 –	14,553,000	3,450,561	147,058,621	84,221,335	41,081	249,324,598
Aug. 2, 1916 –	14,553,000	3,410,042	51,009,979	85,517,391	31,924	154,522,336
Aug. 1, 1917 –	14,553,000	3,399,004	44,811,739	128,744,196	16,167	191,524,106
July 31, 1918 –	14,553,000	3,434,289	37,789,088	138,440,986	10,083	194,227,446
July 30, 1919 –	14,553,000	3,364,409	17,881,009	116,554,700	13,812	152,366,930
Increase since July 22, 1914	—	– 82,044	4,145,616	74,369,403	– 984	78,431,991

BANK OF ENGLAND—*continued*

At	Government Securities.	Other Securities.	Notes.	Gold and Silver Coin.	Total.
	£	£	£	£	£
Aug. 6, 1913 - - -	12,756,539	26,988,361	26,013,865	1,493,404	67,252,169
July 22, 1914 - - -	11,005,126	33,632,762	27,697,120	1,599,931	73,934,939
July 29, 1914 - - -	11,005,126	47,307,530	25,415,055	1,460,139	85,187,850
Aug. 5, 1914 - - -	11,041,152	65,351,656	8,385,650	1,580,999	86,359,457
Aug. 4, 1915 - - -	46,874,146	155,264,727	46,171,745	1,013,980	249,324,598
Aug. 2, 1916 - - -	42,188,361	75,657,166	34,702,570	1,974,239	154,522,336
Aug. 1, 1917 - - -	50,439,661	110,654,852	27,819,240	2,610,353	191,524,106
July 31, 1918 - - -	58,601,132	106,787,164	28,142,390	696,760	194,227,446
July 30, 1919 - - -	43,143,806	81,745,550	25,294,030	2,183,544	152,366,930
Increase since July 22, 1914 - -	32,138,680	48,112,788	-2,403,090	583,613	78,431,991

(1) The Note Circulation (notes issued by Issue Department less notes in Banking Department) has increased by £50,069,965. A large part of this increase may be due to people subject to the Excess Profits tax who have cashed cheques and taken part or the whole of the proceeds in the form of notes for hoarding purposes with the object of part evasion of the tax. In peace time it is generally considered in financial circles that from 70 to 75 per cent. of the Bank of England Note Circulation is in the tills, safes, and strong rooms of the joint stock banks.

(2) The amount of gold coin and bullion held by the Bank of England in the Issue Department has increased by £47,666,875. In the Banking Department the amount of gold and silver coin has increased by £583,613.

(3) Public Deposits have increased by £4,145,616, and Other Deposits by £74,369,403, making a total increase in deposits of £78,515,019.

(4) Government Securities have increased by £32,138,680, and Other Securities by £48,112,788, making a total increase in securities of £80,251,468.

(5) The Banking Reserve (notes, gold and silver coin in Banking Department) has decreased by £1,819,477; but if expressed as a proportion of the total deposit liabilities, it has fallen from 52 per cent. to 20 per cent.

(6) Seven day and other bills have decreased by £984.

The increase, namely, £80,251,468 in the item Securities shows the extent to which the Bank of England, at the behest of the Government, has manufactured additional credit during the course of the war, and gives a reason for part of the great increase that

has taken place in the so-called cash reserves of the joint stock banks (cash in hand and at Bank of England) during the course of the war; for, in the main, credit manufactured by the Bank of England usually gravitates by transfer to the balances of the joint stock banks at the Bank of England, if not in the first instance loaned direct to one or more of the joint stock banks.

A record of Bank Rate changes since the commencement of the year 1914 is shown in the table appended—

BANK RATE CHANGES

Date of Change.			Rate.	Duration in Days.
			%	
1914	January 8	Thursday	4½	14
,,	,, 22	,,	4	7
,,	,, 29	,,	3	182
,,	July 30	,,	4	1
,,	,, 31	Friday	8	1
,,	August 1	Saturday	10	5
,,	,, 6	Thursday	6	2
,,	,, 8	Saturday	5	705
1916	July 13	Thursday	6	189
1917	January 18	,,	5½	77
,,	April 5	,,	5	

(*b*) Joint Stock Banks

In the following review of the changes that took place in the position of joint stock banks during the past two years, and the comparison of the position at 31st December, 1918, with that at 31st December, 1913, it is to be understood that the general expression "joint stock banks" includes not only banks which are established under the Joint Stock Companies Acts, but also the few private banks still remaining in the United Kingdom.

On the next two pages, tables are given comparing the balance sheet position of the joint stock banks at 31st December, 1918, with that two years before—at 31st December, 1916—and also with that five years before—at 31st December, 1913. It is not possible to bring the figures up to 30th June, 1919, for some of the banks publish balance sheets only once a year (dated 31st Dec.).

The main changes that took place in the balance sheet position of the joint stock banks during the two years ending 31st December, 1918, were an increase of £554,678,000 in the amount due to their

depositors, an increase of £16,794,000 in their so-called Cash Reserves (usually described on balance sheets as "Cash in hand and at Bank of England"[1]), an increase of £153,895,000 in Money at Call and at Short Notice, an increase of £73,920,000 in Investments, an increase of £284,627,000 in Bills discounted, and an increase of £64,575,000 in Advances. All these increases show that the banking position, so far as inflation was concerned, went from bad to worse during the period under review.

Comparing the balance sheet position of the joint stock banks at 31st December, 1918, with that at 31st December, 1913, the chief changes that have taken place are an increase of £962,837,000 in the amount due to their depositors, an increase of £201,771,000 in their Cash Reserves, an increase of £129,943,000 in Money at Call and at Short Notice, an increase of £299,646,000 in Investments, an increase of £292,385,000 in Bills discounted, and an increase of £92,308,000 in Advances. The chief reasons for these changes are reviewed at some length below, the figures quoted in the various tables being extracted from the combined balance sheet of the joint stock banks published annually by *The Statist*.

COMBINED BALANCE SHEET OF THE BANKS OF THE UNITED KINGDOM (EXCLUSIVE OF THE BANK OF ENGLAND), 1918 AND 1916

(Compiled by "The Statist," and published in its issues dated 31st May, 1919, and June 2nd, 1917)

LIABILITIES

	1918		1916		
		% of Total		% of Total	Increase (+) or Decrease (–).
	£		£		£
Capital paid up.	73,896,000	3·2	70,697,000	4·1	+ 3,199,000
Reserve Funds .	56,405,000	2·5	43,578,000	2·6	+ 12,827,000
Total . .	130,301,000	5·7	114,275,000	6·7	+ 16,026,000
Notes in circulation . .	56,324,000	2·5	34,814,000	2·0	+ 21,510,000
Acceptances .	65,080,000	2·8	74,336,000	4·3	– 9,256,000
Deposit and Current Accounts	2,033,518,000	88·7	1,478,840,000	86·6	+ 554,678,000
Profit Balance .	6,848,000	·3	5,907,000	·4	+ 941,000
Total Liabilities	2,292,071,000	100·0	1,708,172,000	100·0	+ 583,899,000

[1] Some banks use the expression "Cash in hand and *with* the Bank of England"; other banks "Cash in hand and *in* the Bank of England."

COMBINED BALANCE SHEET OF THE BANKS OF THE UNITED KINGDOM (EXCLUSIVE OF THE BANK OF ENGLAND), 1918 AND 1916—*contd.*

ASSETS

	1918		1916		
		% of Total.		% of Total	Increase (+) or Decrease (-)
	£		£		£
Cash in hand, at Bank of England, etc.	354,079,000	15·5	337,285,000	19·2	+ 16,794,000
Money at Call & at Short Notice	275,575,000	12·0	121,680,000	7·0	+ 153,895,000
Investments .	510,580,000	22·3	436,660,000	25·6	+ 73,920,000
Bills discounted	460,781,000	20·1	176,154,000	10·3	+ 284,627,000
Advances .	598,088,000	26·1	533,513,000	31·9	+ 64,575,000
Liability of Customers for Acceptances	65,080,000	2·8	74,336,000	4·3	- 9,256,000
Bank Premises, etc. . .	27,888,000	1·2	28,544,000	1·7	- 656,000
Total Assets .	2,292,071,000	100·0	1,708,172,000	100·0	+ 583,899,000

NOTE.—" Bankers do not in all cases separate their cash from their call oans or their bills discounted from their advances. To give a comprehensive view of the manner in which banking funds are employed, we have assumed that the experience of banks that do separate these items one from the other is that of all the banks, and we have apportioned the amounts on this basis." (*The Statist.*)

COMBINED BALANCE SHEET OF THE BANKS OF THE UNITED KINGDOM (EXCLUSIVE OF THE BANK OF ENGLAND) 1918 AND 1913

(*Compiled by "The Statist," and published in its issue dated 31st May*, 1919)

LIABILITIES

	1918		1913		
		% of Total.		% of Total.	Increase (+) or Decrease (-).
	£		£		£
Capital paid up.	73,896,000	3·2	71,202,000	5·6	+ 2,694,000
Reserve funds .	56,405,000	2·5	46,621,000	3·7	+ 9,784,000
Total . .	130,301,000	5·7	117,823,000	9·3	+ 12,478,000
Notes in circulation . .	56,324,000	2·5	15,981,000	1·2	+ 40,343,000
Acceptances .	65,080,000	2·8	63,458,000	5·0	+ 1,622,000
Deposit and Current accounts	2,033,518,000	88·7	1,070,681,000	84·0	+ 962,837,000
Profit balance .	6,848,000	·3	6,094,000	·5	+ 754,000
Total Liabilities	2,292,071,000	100·0	1,274,037,000	100·0	+1,018,034,000

COMBINED BALANCE SHEET OF THE BANKS OF THE UNITED KINGDOM (EXCLUSIVE OF THE BANK OF ENGLAND), 1918 AND 1913—*contd.*

ASSETS

	1918		1913		
		% of Total.		% of Total.	Increase (+) or Decrease (–).
	£		£		£
Cash in hand, at Bank of England, etc.	354,079,000	**15·5**	152,308,000	**11·9**	+ 201,771,000
Money at Call & at Short Notice	275,575,000	**12·0**	145,632,000	**11·4**	+ 129,943,000
Investments .	510,580,000	**22·3**	210,934,000	**16·6**	+ 299,646,000
Bills discounted	460,781,000	**20·1**	168,396,000	**13·2**	+ 292,385,000
Advances .	598,088,000	**26·1**	505,780,000	**39·7**	+ 92,308,000
Liability of Customers for Acceptances	65,080,000	**2·8**	63,458,000	**5·0**	+ 1,622,000
Bank Premises, etc. . .	27,888,000	**1·2**	27,529,000	**2·2**	+ 359,000
Total Assets	2,292,071,000	**100·0**	1,274,037,000	**100·0**	+1,018,034,000

(For its compilations, *The Statist* takes the figures of the last Balance Sheets issued by the various banks. The majority of these are dated 31st December, for the year in question; but a few are dated earlier, between 30th June and 31st December; or later, between 1st January and 1st April.)

[It is customary to use the term "Deposits" for the aggregate of the balances standing to the credit of customers, whether on strictly deposit account or on current account.]

[NOTE.—See Notes to previous statement.]

(1) *Increase in Deposit Liabilities to Customers,* £962,837,000.—The increase in the deposit liabilities has been primarily due to the manufacture of credit in various forms by the Government and the banks. Whether the banks subscribe to War Loans direct, or make loans to the Government in any other direct or indirect form, they in net effect (after various transfer and re-transfer entries between bankers' balances and Public Accounts at the Bank of England) contract with the Government, in return for a certain rate or rates of interest, to credit the amount of their subscriptions to customers to whom payments are due from the Government for goods and services. This the banks are able to do because they are the generally accepted custodians of credit. It is obvious that the result of such action by the banks must be

an expansion in the aggregate of the credit balances due to their customers.

The following table shows the annual increases in the amount due to depositors since 31st December, 1913—

AMOUNT DUE ON DEPOSIT AND CURRENT ACCOUNTS

At December 31st.	*Amount.*	*Increase.*
	£	£
1914	1,167,255,000	96,574,000
1915	1,271,706,000	104,451,000
1916	1,478,840,000	207,134,000
1917	1,742,902,000	264,062,000
1918	2,033,518,000	290,616,000
	Increase for five years	£962,837,000

During 1919, up to the publication of this report, it is known there has been a further considerable increase in banking credit, and consequently in deposit liabilities to customers. The Chancellor of the Exchequer stated on 30th July that the banks had subscribed for £111,000,000 of the Victory Loan issued in June. Bank advances to customers for manufacturing and trading purposes are also known to have increased fairly considerably during the year, owing to the great increase in manufacturing costs and the high prices of commodities.

From the composition of the combined balance sheet of joint stock banks and the necessity of balancing both sides of the account, it is obvious that at any time the aggregate of customers' credit balances, apart from any excess deposit over withdrawal of legal tender by customers, or a reduction in the relatively small amount of own notes outstanding, can only increase by various forms of credit advances by banks. In their effect in increasing deposits, it is immaterial whether the advances be at call or at short notice, or for more or less fixed periods, or permanent in the form of purchases of investments, and whether made to the Government or the general public. During the ten years, 1904–1913, bank deposits increased on an average about £30,000,000 a year. Of this increase, about £27,000,000 was due to bank credit expansion, the remaining £3,000,000 or less being due to excess deposit over withdrawal of legal tender, mainly gold, by customers.

(2) *Increase in Cash in hand, at Bank of England, etc.*, £201,771,000. —The increase in Cash Reserves is due partly to temporary loans by the joint stock banks to the Government, through the medium of the Bank of England; and partly to the reserves of currency notes held by the banks on 31st December, 1918, being considerably greater than the amount of gold they held at 31st December, 1913. It is obvious that to the extent the joint stock banks take currency notes from the Bank of England (without exchanging gold or other notes for them) and retain them in their own reserves, so will their aggregate cash reserves tend to be increased, provided that the Government draws on the credit created by the withdrawal of such notes from the Bank of England. Up to 31st December, 1918, the Government had drawn on the Currency Note Account to the extent of £305,133,409. The increase in the cash reserves of the joint stock banks during the war is certainly not due to excess deposit over withdrawal of legal tender by customers.

The following table shows the annual increases in the Cash Reserves of the joint stock banks since 31st December, 1913—

AMOUNT OF CASH RESERVES

At December 31st.	*Amount.*	*Increase.*
	£	£
1914	221,595,000	69,287,000
1915	224,421,000	2,826,000
1916	337,285,000	112,864,000
1917	319,504,000	17,781,000 (decrease)
1918	354,079,000	34,575,000
Increase for five years		£201,771,000

Taking the joint stock banks as one unit, their cash reserves may at any time be increased in any of the following six ways—

(*A*) By an excess deposit over withdrawal of legal tender by their customers. During the past five years the reverse has happened; there has been an excess withdrawal over deposit of legal tender, owing to the general rise in commodity prices and increased wages requiring an additional amount of legal tender to be in circulation.

(*B*) By the joint stock banks increasing their own reserves of legal tender by withdrawals of legal tender from the Bank of

England, and having their balances at the Bank of England maintained or increased by any of the credit operations enumerated in the following paragraphs (*C*), (*D*), (*E*). This method was well illustrated during the war by the indirect effects of the issue of Currency Notes on joint stock bank reserves.

(*C*) By the Bank of England granting credit to bill brokers and other borrowers to meet loans called in by the joint stock banks.

(*D*) By the Bank of England granting credit to other customers, who transfer the whole or part of it to the accounts of the joint stock banks at the Bank of England.

(*E*) By the joint stock banks paying in to their accounts at the Bank of England drafts drawn on the Bank of England. These drafts may be drawn on credit balances at or against advances made by the Bank of England, and may represent amounts due direct to the joint stock banks in the first instance, or to customers of the joint stock banks. In the latter case, the joint stock banks will first have given credit to their customers for the amounts of the drafts.

(*F*) By the joint stock banks making temporary loans to the Government through the medium of the Bank of England, the Government using such loans for war disbursements; and the joint stock banks in their balance sheets including them wholly or partly under the heading "Cash in hand and at Bank of England," instead of wholly under the heading "Money at Call and at Short Notice." This possible form of Government borrowing was certainly not in operation before the war, but there are good reasons for believing it to have been in operation during and since 1916.

Summing up in the matter of joint stock bank cash reserves, the great increase in such reserves during the war is to be accounted for by the expansion of credit by the Bank of England and the ultimate transfer of the major part of it to the accounts of the joint stock banks at the Bank of England, successive borrowings by the Government of bankers' spare balances and subsequent disbursement of such borrowings, and the building up of additional legal tender reserves in hand by the joint stock banks in the form of currency notes and currency note certificates, and the use by the Government of the credit thereby created. No

part of the increase has been due to excess deposit over withdrawal of legal tender by customers of joint stock banks, for, on the contrary, there has been an almost continuous absorption of legal tender by the public since the commencement of the war, owing to rapidly increasing commodity prices and wages.

(3) *Increase in Money at Call and at Short Notice*, £129,943,000.—The increase in the amount of money at call and at short notice is primarily, if not wholly, due to the joint stock banks making short loans to the Bank of England, as explained in the reasons given for the increase in the cash reserves of the former banks.

The following table shows the annual increases in the amount of Money at Call and at Short Notice since 31st December, 1913—

AMOUNT OF MONEY AT CALL AND AT SHORT NOTICE

At 31st December.	*Amount.*	*Increase.*
	£	£
1914	122,239,000	23,393,000 (decrease)
1915	101,510,000	20,729,000 (decrease)
1916	121,680,000	20,170,000
1917	214,885,000	93,205,000
1918	275,575,000	60,690,000
Increase for five years		£129,943,000

(4) *Increase in Investments*, £299,646,000.—The joint stock banks are known to have subscribed directly to the various War Loans more than £300,000,000 up to 31st December, 1918, and to have disposed of the greater part of the small amount of foreign investments they held at the commencement of the war in the general scheme of Government mobilization of foreign securities.[1]

The following table shows the annual increases in the amount of investments since 31st December, 1913—

AMOUNT OF INVESTMENTS

At 31st December.	*Amount.*	*Increase.*
	£	£
1914	241,742,000	30,808,000
1915	441,052,000	199,310,000
1916	436,660,000	4,392,000 (decrease)
1917	431,962,000	4,698,000 (decrease)
1918	510,580,000	78,618,000
Inrcease for five years		£299,646,000

[1] This scheme was based on suggestions sent to the Treasury by Mr. A. H. Gibson on 5th July, 1915, and on subsequent dates.

(5) *Increase in Bills Discounted*, £292,385,000.—There is every reason to believe that the whole of the increase in bills discounted is due to holdings of Treasury bills. The major part of the increase took place during the two years ending 31st December, 1918. Some of the joint stock banks state in their balance sheets, or have proclaimed at their annual meetings, the actual amount of Treasury bills held by the Bank. The amount of Treasury bills outstanding on 31st December, 1918, was £1,094,740,000. During the current year 1919, a further considerable increase in bills discounted is to be expected, on account of discounts of mercantile bills following on the re-establishment of world-wide trade at prices considerably higher than those ruling prior to the war.

The following table shows the annual increases in the amount of bills discounted since 31st December, 1913—

AMOUNT OF BILLS DISCOUNTED

At 31st December.	*Amount.*	*Increase.*
	£	£
1914	161,540,000	6,856,000 (decrease)
1915	127,401,000	34,139,000 (decrease)
1916	176,154,000	48,753,000
1917	368,043,000	191,889,000
1918	460,781,000	92,738,000
Increase for five years		£292,385,000

(6) *Increase in Advances*, £92,308,000.—The increase in the amount of advances during the past five years is due to increases during the three years 1916–1918. The increase during these three years is due to advances by the banks to customers to enable them to subscribe to War Loans, and to the considerably increased cost of labour and higher prices of materials compelling some traders to seek additional accommodation from their bankers, notwithstanding large trading profits.

During the current year, and possibly for some years hence, a fairly considerable increase in advances will take place, following on the re-establishment of world-wide trade, present costs of labour and raw materials being from 100 to 300 per cent. higher than costs under pre-war conditions. Manufacturing and trading concerns now require considerably more floating capital to run the businesses than they did in pre-war times.

The following table shows the annual increases in the amount of advances since 31st December, 1913—

AMOUNT OF ADVANCES

At 31st December.	*Amount.*	*Increase.*
	£	£
1914 . . .	536,319,000	30,539,000
1915 . . .	498,285,000	38,034,000 (decrease)
1916 . . .	533,513,000	35,228,000
1917 . . .	549,119,000	15,606,000
1918 . . .	598,088,000	48,969,000
Increase for five years		£92,308,000

THE AMALGAMATION MOVEMENT

The amalgamation movement between banks has been particularly active and important during the past two years. The movement attained such dimensions, that it aroused fears in the commercial world of the establishment of a money trust. To allay these fears, the Chancellor of the Exchequer announced in the House of Commons on Tuesday, 5th March, 1918, that a Committee had been appointed "to consider and report to what extent, if at all, amalgamation between banks may affect prejudicially the interests of the industrial and mercantile community, and whether it is desirable that legislation should be introduced to prohibit such amalgamations or to provide safeguards under which they might continue to be permitted." The Committee was composed chiefly of bankers, with, however, a sufficiently strong infusion of ordinary business representatives. All proposed amalgamations were held up whilst the Committee was sitting.

On Tuesday, 21st May, 1918, the Committee presented its Report. Below are given some of the conclusions come to by the Committee—

Several recent amalgamations, however, have undoubtedly provoked an unusual amount of interest, and have been seriously criticized in certain quarters. This change in public opinion appears to be due mainly to the fact that amalgamations have changed their type and consist no longer in the absorption of a local bank by a larger and more widely spread joint stock bank, but in the union of two joint stock banks, both already possessing large funds and branches spread over a wide area. These two types of amalgamation differ very materially from one another, and arguments used to justify the former type do not necessarily apply to the latter.

Just as the large banks of the past secured certain advantages to trade by collecting deposits from parts of the country where they were not required, and placing them at the disposal of other parts which stood in need of advances, so it is claimed that this process can be carried still further with advantage by amalgamating large banks with one another. This is no doubt true, though, of course, the degree to which an extension of area is in fact secured by amalgamating banks differs considerably in each case. . . . There must come a point when the policy of substituting one large bank for two will usually mean a very small extension of area, if any, and some reduction of competition.

It has been represented to us that there is a real danger lest one bank, by the gradual extension of its connections, may obtain such a position that it can attract an altogether preponderate amount of banking business; or, alternatively, lest two banks may approach such a position independently and then achieve it by amalgamation. Any approach to a banking combine or Money Trust, by this or any other means, would undoubtedly cause great apprehension to all classes of the community and give rise to a demand for nationalizing the banking trade. . . . While we believe there is at present no idea of a Money Trust, it appears to us not altogether impossible that circumstances might produce something approaching to it at a comparatively early date.

Such are the main arguments laid before us against further amalgamations. Undoubtedly some of the dangers feared are somewhat problematical and remote, and we should very much have preferred to avoid the necessity for any interference by Government with the administration of banking. But, on a careful review of all the above considerations, we are forced to the conclusion that the possible dangers resulting from further large amalgamations are material enough to outweigh the arguments against Government interference, and that in view of the exceptional extent to which the interests of the whole community depend on banking arrangements, some measure of Government control is essential. . . . We therefore recommend that legislation be passed requiring that the prior approval of the Government must be obtained before any amalgamations are announced or carried into effect.

It only remains to make a suggestion as to which Government department or departments should be charged with the responsibility of approving or disapproving amalgamation schemes, etc., under our proposal above. On the whole, we think that the approval both of the Treasury and the Board of Trade should be obtained and that legislation should be passed requiring the two departments to set up a special Statutory Committee to advise them, the members of which should be nominated by the departments from time to time for such period as may seem desirable, and should consist of one commercial representative and one financial representative, with power to appoint an arbitrator, should they disagree.

Early in June, 1918, the Chancellor of the Exchequer stated that the Government proposed to introduce legislation as soon as

possible to carry out the recommendations contained in the Report of the Bank Amalgamation Committee. Meanwhile, to avoid delay, a committee of two had been set up to advise the departments concerned on the desirability or otherwise of any schemes for amalgamations that may be proposed. On 15th April, 1919, the Chancellor introduced a Bill entitled "A Bill to make provision for controlling the amalgamation of Joint Stock Banks and for purposes connected therewith," the Act to take effect as from the 27th day of March, 1919. The Bill provides that—

> Except with the previous approval of the Treasury and Board of Trade, given on an application made for the purpose under this Act, and subject to compliance with any conditions attached to the approval, it shall not be lawful for any joint stock bank (*a*) to amalgamate with any other bank; or (*b*) to transfer or sell its business or any part of its business to any other bank, or to acquire the business or any part of the business of, or any interest in, any other bank; and except with such approval as aforesaid and subject to such compliance as aforesaid, it shall not be lawful for any person being a director of a joint stock bank to become a director of any other joint stock bank, provided that nothing hereinbefore mentioned shall make it unlawful for any person to hold any directorship which he holds at the commencement of this Act.

The following is a list of amalgamations that have been announced since 1st August, 1917, up to 1st August, 1919—

Former Banks.	*Now Amalgamated as*
London City and Midland London Joint Stock	London Joint City and Midland Bank, Ltd.
Lloyds Capital and Counties	Lloyds Bank, Ltd.
London County and Westminster Parr's Nottingham and Nottinghamshire	London County Westminster and Parr's Bank, Ltd.
Barclays London and South Western London and Provincial	Barclays Bank, Ltd.
National Provincial of England Union of London and Smiths W. and J. Biggerstaff Bradford District Bank	National Provincial and Union Bank of England, Ltd.
Bank of Liverpool Martins	Bank of Liverpool and Martins, Ltd.
Union Bank of Manchester East Morley and Bradford Deposit Bank	Union Bank of Manchester, Ltd.

In addition to the above amalgamations, some of the English banks have acquired controlling interest in certain Irish and Scottish banks. Intimate mutual working arrangements have also been made with a number of foreign and colonial banks.

The following table shows the names of the five joint stock banks which had more than £200,000,000 due to depositors on 31st December, 1918—

Name of Bank.	*Amount due by Bank on Deposit and Current Accounts.*
	£
London Joint City & Midland Bank, Ltd.. . .	335,350,315
Lloyds Bank, Ltd.	266,808,139
London County Westminster and Parr's Bank, Ltd..	263,129,887
Barclays Bank, Ltd.	239,381,613
National Provincial and Union Bank of England, Ltd.	200,864,639

Below the £200,000,000 limit the next largest bank is the Bank of Liverpool & Martins, Ltd., which on 31st December, 1918, had deposit and current account liabilities of £63,243,450.

The amalgamation movement among banks has certainly not yet reached its finality. One would think that a very advantageous amalgamation could be effected by all the existing Lancashire and Yorkshire banks combining their resources. Such a combination would be mutually advantageous to the banks and their customers.

(*c*) Savings Banks

During the past two years there has been a considerable increase in Savings Banks deposits, notwithstanding the rate of interest allowed to depositors has remained at the low figure of 2½ per cent. per annum. The increase for the year ending 3rd August, 1918, was about £33,400,000; and for the year ending 2nd August, 1919, was about £52,900,000. Evidently the great increase in wages that has taken place during the past two years has left the working classes with a greater margin for saving purposes. During the first three years of war, the deposits of Savings Banks decreased about £1,000,000. This decrease was, however, due to the withdrawal of over £20,000,000 for investment in the 4½ and 5 per cent. War Loans issued during such period.

The following table shows the liabilities of the Government on Savings Bank Account at yearly intervals since the commencement of the war:

LIABILITIES OF THE GOVERNMENT ON SAVINGS BANK ACCOUNT[1]

At	Total amount at the credit of		Total	Increase + Decrease −
	The Fund for the Banks for Savings (Trustee Savings Banks).	The Post Office Savings Bank Fund.		
	£	£	£	£ For one year
Aug. 8, 1914[2] .	52,979,463	191,516,822	244,496,285	+ 6,141,243
,, 7, 1915 .	50,371,832	181,648,755	232,020,587	− 12,475,698
,, 5, 1916 .	52,232,866	193,953,283	246,186,149	+ 14,165,562
,, 4, 1917 .	48,716,324	194,811,264	243,527,588	− 2,658,561
,, 3, 1918 .	56,281,545	220,655,438	276,936,983	+ 33,409,395
,, 2, 1919 .	68,422,709	261,420,027	329,842,736	+ 52,905,753
Increase for 5 years	15,443,246	69,903,205	85,346,451	

The table on page 128 shows the number of Trustee Savings Banks open, the number of depositors, and the amount due to depositors at Savings Bank year ends since 20th November, 1913.

In the case of the Post Office Savings Bank, no exact figures are at present available later than those for 31st December, 1915, on which date the Savings Bank had 9,971,675 accounts, on which there was due £186,327,584. The above table shows

[1] The figures given in the above table do not represent the exact amounts due to depositors of the two classes of savings banks at the respective dates, but are the amounts which have been handed over by the Savings Banks for investment by the National Debt Commissioners, in conformity with the Savings Banks Acts. The Trustee Savings Banks keeps a small cash balance with local joint stock banks, and the Postmaster-General also keeps a small balance on Savings Bank Account to meet current withdrawals. These cash balances in both cases are, however, usually less than 1 per cent. of the liabilities to depositors, so the fluctuations in the figures stated in the table may, therefore, be taken as representative of the experience of the savings banks since the commencement of the war. The figures for the Trustee Savings Banks do not in any way include the funds of the Special Investment Departments of the Trustee Savings Banks, for the funds of such departments are not handed over to the National Debt Commissioners, but are invested direct by the Trustees of the banks, subject to certain statutory restrictions, largely in temporary Government loans and in local loans.

[2] For the four weeks ending 8th August, 1914, there was a total decrease of £2,030,818, partly due to the outbreak of war and partly to withdrawals for holidays.

that on 2nd August, 1919, the amount due to depositors must have exceeded £261,000,000.

TRUSTEE SAVINGS BANKS

Year ending 20 Nov.	No. of Banks.	Number of Depositors.	Increase in number of Depositors.	Sums Due to Depositors.			
				General Departments.	Investment Departments.	Total.	Increase + Decrease −
				£	£	£	£
1913	202	1,912,820	42,310	54,258,861	14,289,116	68,547,977	+ 1,429,955
1914	196	1,917,944	5,124	53,943,271	15,510,615	69,453,886	+ 905,909
1915	191	1,966,730	48,786	51,412,370	15,377,281	66,789,651	− 2,664,235
1916	190	2,015,578	48,848	53,783,998	14,633,474	68,417,472	+ 1,627,821
1917	179	2,046,996	31,418	52,350,107	13,993,704	66,343,841	− 2,073,631
1918[1]	171	2,128,500	81,504	60,984,000	14,075,000	75,059,000	+ 8,715,159

[1] The figures for 1918 are still subject to slight correction.

VII. Currency

The main change in internal currency during the last two years has been a record expansion of paper issues, with all the attendant evils of inflation. There has also been an enormous expansion in potential currency—bank deposits—which subject is considered at length under the heading of "Banking."

Since 1st August, 1917, and up to 30th July, 1919, a further £170,245,551 of Treasury currency notes and currency note certificates have been absorbed by the public and the banks, representing an increase of 101 per cent. in a period of two years. Currency notes were first issued by the Treasury on Friday, 7th August, 1914. The following table shows the amount of currency notes and currency note certificates outstanding, together with the composition of the Currency Note Redemption Account, at the end of each year of war; and in the case of the present year, five weeks after the signing of the Peace Treaty.

The amount of gold coin and bullion held in the Redemption Account, namely, £28,500,000, has not been increased since 12th May, 1915.

Currency Notes Outstanding and Redemption Account

At	Notes and Certificates Outstanding.	Redemption Account.			
		Gold Coin and Bullion	Ratio of Gold to Notes.	Government Securities.	Balance at Bank of England.
	£	£		£	£
1915					
August 4 .	46,729,640	28,500,000	61·0	9,585,828	7,437,287
1916					
August 2 .	127,674,408	28,500,000	22·4	92,704,722	8,583,605
1917					
August 1 .	168,541,536	28,500,000	16·9	141,590,655	5,158,641
1918					
July 31 .	263,299,933	28,500,000	10·8	240,358,823	5,695,268
1919					
July 30 .	338,787,087	28,500,000	8·4	323,326,735	3,305,239

It will be observed from the following table that the greatest increase in the amount outstanding of currency notes and

currency note certificates took place during the fourth year of war, but the greatest percentage increase during the second year of war—

ANNUAL INCREASES IN THE AMOUNT OF CURRENCY NOTES AND CURRENCY NOTE CERTIFICATES OUTSTANDING

At	Notes and Certificates Outstanding.	Increase in Amount Outstanding.	Percentage Increase.
	£	£	
1915 August 4 . .	46,729,640	46,729,640	—
1916 August 2 . .	127,674,408	80,944,768	173%
1917 August 1 . .	168,541,536	40,867,128	32%
1918 July 31 . .	263,299,933	94,758,397	56%
1919 July 30 . .	338,787,087	75,487,154	29%

The balance sheet of the Currency Note Account at Wednesday, 1st August, 1917, compared with that at Wednesday, 30th July, 1919, shows that during the past two years the amount of £1 notes outstanding has increased £139,508,793, or 115 per cent., and the amount of 10s. notes £12,846,758, or only 40 per cent. This disproportion of increases is obviously partly due to the great rise in commodity prices necessitating people carrying with them for their purchases a larger proportion of £1 notes. Another factor contributing to the disproportion will be the tendency of banks to keep their reserves in £1 notes rather than 10s. notes, after they have acquired a reasonable quantity of the latter for till purposes. On the next page are given the balance sheets above referred to.

During the past two years a further considerable increase in the bank note circulation has taken place, detailed particulars of which are shown in the table on page 127.

This table discloses that of the total increase of £61,500,000 in the bank note circulation during the last two years, notes of the Bank of England account for £39,500,000, notes of the Irish banks for £11,400,000, and notes of the Scotch banks for £10,600,000 (taking four weeks' averages). Since the beginning of the war, the bank note increases have been: Bank of England, £49,800,000; private banks in England, £100,000; Irish banks, £23,400,000: Scotch banks, £20,000,000. Total increase, £93,300,000.

CURRENCY NOTE ISSUE

Balance Sheet, 1st August, 1917

	£		£
Notes outstanding—		*Advances*—	
One Pound . .	121,192,625	Scottish and Irish Banks of Issue .	—
Ten Shilling . .	31,948,911	Other Bankers .	179,000
		Trustee Savings Banks	255,500
Certificates outstanding .	15,400,000	*Currency Note Redemption Account*—	
Total . .	168,541,536	Gold Coin and Bullion	28,500,000
Investments Reserve A/c	7,142,260	Government Securities . . .	141,590,655
		Balance at Bank of England . .	5,158,641
Total . .	175,683,796	Total . .	175,683,796

Balance Sheet, 30th July, 1919

	£		£
Notes outstanding—		*Advances*—	
One Pound . .	260,701,418	Scottish and Irish Banks of Issue .	—
Ten Shilling . .	44,795,669	Other Bankers .	150,000
		Trustee Savings Banks	330,000
Certificates outstanding .	33,290,000	*Currency Note Redemption Account*—	
Total . .	338,787,087	Gold Coin and Bullion	28,500,000
Investments Reserve A/c.	16,824,887	Government Securities . . .	323,326,735
		Balance at Bank of England . .	3,305,239
Total . .	355,611,974	Total . .	355,611,974

Bank Notes

Average Circulation for Four Weeks ending Dates as stated

Bank of England.	Private Banks in England.	Joint Stock Banks in England.	Total.
July 8, 1914— £29,109,149	July 4, 1914— £62,578	July 4, 1914— £19,135	£29,190,862
July 7, 1915— £33,946,480	July 3, 1915— £83,912	July 3, 1915— £25,638	£34,056,030
July 5, 1916— £35,708,966	July 1, 1916— £94,767	July 1, 1916— £30,647	£35,834,380
July 11, 1917— £39,358,081	July 7, 1917— £115,043	July 7, 1917— £28,734	£39,501,858
July 10, 1918— £53,615,662	July 6, 1918— £134,775	July 6, 1918— £31,356	£53,781,793
July 9, 1919— £78,891,950	July 5, 1919— £162,296	July 5, 1919— £4,803	£79,059,049

	Irish Banks.	Scotch Banks.	Total.
	£	£	£
Ending July 18, 1914 .	8,038,396	7,990,118	16,028,514
,, ,, 17, 1915 .	13,259,802	11,372,279	24,632,081
,, ,, 15, 1916 .	17,365,776	14,520,385	31,886,161
,, ,, 14, 1917 .	20,069,297	17,451,575	37,520,872
,, ,, 13, 1918 .	28,073,833	23,633,480	51,707,313
,, June 14, 1919[1] .	31,484,423	28,036,792	59,521,215

Though gold has disappeared from circulation, different banks report that occasionally depositors still pay in small amounts from hoarded stocks.

[1] At time of writing, July figures not available.

VIII. The Foreign Exchanges

During the last two years there has been considerable movement in the leading exchanges, as will be observed from a comparison of rates ruling on 1st August, 1919, with those ruling on 3rd August, 1917, shown in the table below.

The comparison shows that the exchanges on London have become considerably more unfavourable to France and Italy. The New York exchange has moved very adversely to London since the agreement between the two centres to stabilize it at about 4·76½ was cancelled on 21st March, 1919. The only correctives to this exchange in the future are increased production by Great Britain and large exports, restriction in imports, or further loans by the United States. The latter course, needless to state, would simply be putting off settlement to some future date. The payment of indemnities by Germany will have very little effect on the New York exchange.

Country or Place.	Mean Rate Current on 3rd August, 1917.	Mean Rate Current on 1st August, 1919.	Par as usually quoted.	Rate on 1st Aug., 1919 compared with par rate. Premium (+) Discount (–).
				%
Paris . .	27·41¼	31·77½	25·22½ francs to £1	+ 26·0
Italy . .	34·43	37·55	25·22½ lire to £1	+ 48·8
New York .	4·76 7/16	4·35¾	4·86⅔ dollars to £1	– 10·5
Madrid . .	20·76½	22·82½	25·22½ pesetas to £1	– 9·5
Switzerland	21·40	24·27½	25·22½ francs to £1	– 3·8
Amsterdam	11·29½	11·58½	12·107 florins to £1	– 4·3
Copenhagen	15·95	19·71½	18·159 kroner to £1	+ 8·6
Christiania .	15·55	18·41½	18·159 ,, to £1	+ 1·4
Stockholm .	14·10	17·51½	18·159 ,, to £1	– 3·6

The exchanges of the neutral countries shown in the above table have all become more favourable to London during the past two years, though those of Copenhagen and Christiania are still adverse. The improvement is largely to be attributed to recent

purchases of manufactured goods from Great Britain, the war having caused great scarcity of certain classes of goods in neutral countries. Some of the purchases by neutrals were made with the express intention of re-sale to Germany as soon as possible after the signing of peace. Traders in neutral countries have paid high prices for finished goods from Great Britain, because they were fully aware they would reap handsome profits when they came to re-sell to Germany, so long as the great scarcity in that country continued.

IX. War Finance

Below there is given a brief chronological review of financial changes and of the methods employed for financing the war since 1st August, 1917. On that date the war was being financed by the following methods: (1) Sales of Treasury bills; (2) Sales of Exchequer bonds; (3) Sales of War Savings Certificates; (4) Loans Raised in America; (5) Ways and Means Advances; and (6) Receipts from Taxation.

On 24th August, 1917, it was announced that periodical issues of British Treasury bills would be placed on the Money Market of the United States, the total amount then authorized being $150,000,000.

On 22nd September, 1917, it was announced that the existing issue of 5 per cent. Exchequer bonds would be discontinued. Five days later, the Premier stated to bankers the terms of issue of a new form of bonds to be known as National War Bonds, sales to commence on 2nd October, 1917. The conditions of issue of such bonds are considered at some length hereafter.

The Government having received many expressions of opinion to the effect that an issue of Premium Bonds would prove very popular with certain classes of the community, it appointed on 6th November, 1917, a Select Committee to consider and report on the advisability or otherwise of such an issue. The Report of this Committee was issued on 18th January, 1918. The conclusions reached by the Committee are expressed in the following extracts from the Report—

> To sum up our conclusions, we beg to report that the present opportunities of investment for the general public are not sufficient to obtain their free and full support, and that there is a considerable untapped source of investment, which might be secured for war needs by means of an issue of bonds, which would, by a speculative element, while preserving the capital intact, attract the savings of the small investor to whom the ordinary flat rate of interest does not appeal.
>
> We doubt, however, whether the amount of new money to be obtained would justify any change of a contentious character in our financial methods, and we are satisfied that such strong views are held with regard to Premium Bonds that legislation to sanction them would be difficult to obtain, and that such a proposal might cause a

controversy in the country which would be most undesirable. We do not, therefore, advise that an issue of Premium Bonds be made at the present time, or until further efforts have been made to render present issues more attractive to the investor.

On 15th November, 1917, the Bank of England made a commencement of differentiating the rates of interest it was prepared to allow on deposits of home and foreign money. On that date it announced a special rate of 4½ per cent. for foreign money; but no alteration was made in the rate for domestic deposits by the clearing banks, which rate remained at 4 per cent.

On 27th December, 1917, the rate at which Treasury bills were offered for sale was reduced to 4 per cent. The rate had been 4¾ per cent. since the previous 3rd July.

A reduction from 4 to 3½ per cent. was made by the Bank of England on 2nd January, 1918, in the rate for loans of domestic money from the clearing banks. No alteration was made in the rate for foreign money, which remained at 4½ per cent.

An announcement was made on 12th January, 1918, to the effect that an agreement had been concluded with the Argentine for a credit of £40,000,000 to Great Britain and France.

On 14th February, 1918, the rate at which new issues of Treasury bills were offered was reduced from 4 to 3½ per cent. On the same day the Bank of England reduced from 3½ to 3 per cent. its rate for domestic loans from the clearing banks. The rate on foreign money remained at 4½ per cent.

A second series of National War Bonds came on sale on and after 2nd April, 1918, the former series being discontinued.

At the end of May, 1918, the banks agreed, in order to stimulate the sale of National War Bonds, that henceforth 3 per cent. should be the maximum rate which they would allow to any of their depositors.

A third series of National War Bonds came on sale on and after 1st October, 1918, the former series being discontinued.

On 11th November, 1918, an armistice was signed with Germany.

The Bank of England decided on 8th January, 1919, to withdraw, in the case of French, Belgium, and Italian deposits, the special rate of 4½ per cent. allowed for loans of foreign money. As the exchanges of such countries were in favour of London, there was obviously no necessity to continue the high rate of

interest. On 13th January, 1919, it was decided that the rate granted to French, Italian, and Belgian depositors should not exceed 3½ per cent.

A fourth series of National War Bonds came on sale on and after 1st February, 1919, the former series being discontinued. The bonds carried no rights of conversion into past or future war loans, rights carried by bonds of the first three series.

On 29th May, 1919, the Chancellor of the Exchequer announced that he would seek powers on the following Monday, 2nd June, for the issue of a new loan. He also stated that the net debt of the United Kingdom to the United States was $4,050,000,000 (£870,967,742). The issue of National War Bonds and Treasury Bills was suspended from 31st May. On 2nd June, the Chancellor obtained the necessary powers to issue a new loan, the prospectus of which was issued on 13th June. The issue of this loan is dealt with at some length hereafter.

On 23rd June, 1919, Germany accepted the peace terms imposed by the Allies, affixing her signature thereto on 28th June.

Sales of Treasury Bills were resumed by the Government on 14th July, 1919, on the basis of 3⅜ per cent. for two months, 3½ per cent. for three months, and 4 per cent. for six months.

On 21st July, 1919, it was announced that the Bank of England would cease on the following Wednesday, 23rd July, to allow 3 per cent. on three-day deposits made by the clearing banks, and that after the end of the month it would allow no interest on existing deposits. No alteration was, however, made in the 4½ per cent. rate allowed on certain foreign balances.

On 30th July, 1919, it was announced that the Chancellor of the Exchequer no longer considered the banks to be bound by their agreement not to allow more than 3 per cent. to depositors. This agreement, as has been already stated, was entered into at the end of May, 1918, in order to stimulate the sale of National War Bonds.

National War Bonds

During the first three years of war, the Government had repeatedly urged upon it the desirability of changing the expression "Exchequer Bond" in future issues into one more likely to attract loans from the masses, and bearing some reference to

the war. These suggestions eventually bore fruit. On 27th September, 1917, the Premier announced to bankers the terms of issue of a new class of bonds to be known as National War Bonds, applications therefor to be received on and after 2nd October, 1917. This issue later became known as the first series. A second series came on sale on and after 2nd April, 1918; a third series on and after 1st October, 1918; and a fourth and final series on and after 1st February, 1919, until withdrawn on 31st May, 1919, in view of the imminence of a new loan. When a new series began, sales under the former series ceased henceforth. The different types of bonds issued in each series are shown below—

FIRST SERIES

5% Bonds. . Repayable 1st October, 1922, at 102%;
5% Bonds . Repayable 1st October, 1924, at 103%;
5% Bonds . Repayable 1st October, 1927, at 105%;
4% Bonds[1] . Repayable 1st October, 1927, at 100%.
Price of Issue, £100 per cent.

SECOND SERIES

5% Bonds . Repayable 1st April, 1923, at 102%;
5% Bonds . Repayable 1st April, 1925, at 103%;
5% Bonds . Repayable 1st April, 1928, at 105%;
4% Bonds[1] . Repayable 1st April, 1928, at 100%;
Price of Issue, £100 per cent.

THIRD SERIES

5% Bonds . Repayable 1st September, 1923, at 102%;
5% Bonds . Repayable 1st September, 1925, at 103%;
5% Bonds . Repayable 1st September, 1928, at 105%;
4% Bonds[1] . Repayable 1st September, 1928, at 100%.
Price of Issue: 5% bonds, £100 per cent.; 4% bonds, £101 10s. per cent.

FOURTH SERIES

5% Bonds . Repayable 1st February, 1924, at 102%;
5% Bonds . Repayable 1st February, 1929, at 105%;
4% Bonds[1] . Repayable 1st February, 1929, at 100%.
Price of Issue: 5% bonds, £100 per cent.; 4% bonds, £101 10s. per cent.

The bonds were issued in denominations of £50, £100, £200, £500, £1,000, and £5,000. Holders, according to the conditions laid down in the prospectuses, acquired the following important rights—

National War Bonds will be accepted at their nominal value, with due adjustment in respect of interest, by the Commissioners of Inland Revenue in satisfaction of amounts due on account of

[1] Income Tax Compounded.

Death Duties, Excess Profits Duty, or Munitions Exchequer Payments, subject to certain conditions as to length of time of ownership.

Holders of the 5 per cent. bonds may, during certain periods in each year, convert their holdings into 5 per cent. War Loan, 1929–1947; and holders of the 4 per cent. bonds may convert their holdings into 4 per cent. War Loan, 1929–1942 (Income Tax compounded). This conversion right did not apply to the fourth series of bonds.

In the event of future issues (other than issues made abroad or issues of Exchequer Bonds, Treasury Bills, or similar short-dated securities) being made by the Government for the purpose of carrying on the war, National War Bonds will be accepted at par as the equivalent of cash for the purpose of subscriptions to such issues, and an allowance will be made for any interest accrued on bonds so accepted. This conversion right did not apply to the fourth series of bonds.

Provision was also made in the prospectuses of the four series for the conversion of 4½ per cent. War Loan, 1925–1945; 5 per cent. Exchequer bonds, 1919, 1920, 1921; and 6 per cent. Exchequer bonds, 1920, into National War Bonds during the continuance of the issue of such bonds.

The various issues of National War Bonds were exceedingly successful, the total Exchequer receipts from this form of borrowing up to 2nd August, 1919, being £1,732,597,285.

THE VICTORY LOAN

4 per cent. Funding Loan, 1960–1990	4 per cent. Victory Bonds
Price of Issue, £80 per cent.	Price of Issue, £85 per cent.
Redeemable within 71 years by means of a Sinking Fund.	Redeemable at par by a cumulative Sinking Fund operating by means of Annual Drawings, commencing 1st September, 1920.

The Victory Loan represented the fourth great loan, apart from issues of Exchequer Bonds and National War Bonds, issued since the beginning of the war. It was mainly designed to pay off a large amount of the floating debt. The first definite indication that a new loan was imminent came on 29th May, 1919, when the Chancellor of the Exchequer announced that he would seek powers on the following Monday, 2nd June, for the issue of a new loan. The necessary powers being obtained on the Monday, the

prospectus of the loan was issued on 13th June, 1919. Two different issues were made: one termed "Funding Loan," the other "Victory Bonds." Both were 4 per cent. loans, but the Funding Loan was issued at £80 per cent., and is redeemable not later than 1990, with an option to the Government of redeeming in or after 1960; while the Victory Bonds were issued at £85 per cent. and are redeemable by annual drawings at par, beginning on 1st September, 1920. Subscribers to the Victory Bonds consequently paid £5 per cent. more for their investment than subscribers to the Funding Loan, but the former acquired the possibility of being holders at any time of drawn bonds, and therefore of receiving a bonus or premium of £15 per cent. at the time the bonds are drawn for redemption at par. The yield on the Funding Loan is 5 per cent., the present value of the capital bonus of 20 per cent. at the end of seventy-one years being negligible. The immediate yield on the Victory Bonds is £4 14s. per cent. The Government has undertaken in the case of each loan to set aside 2½ per cent. each half-year on the original amount of the loan, and after paying interest on the amount outstanding to devote the balance to redemption purposes. In the case of the Funding Loan the balance is to be applied to purchases for cancellation if the price is at or under par; if the price is over par the balance will either be used for purchase or otherwise invested. In the case of the Victory Bonds the balance of the sinking fund is to be applied to redemption of bonds drawn for payment at par. The prospectus also stated that both issues will be taken in payment of death duties: the Funding Loan at its issue price of £80 per cent.; the Victory Bonds at their full face value £100 per cent. Payment for both issues might be made in Treasury bills at 3½ per cent. discount, or in 4½ per cent. War Loan; 5 per cent. Exchequer Bonds, 1919, 1920, 1921, 1922; 6 per cent. Exchequer Bonds, 1920; or in 4 or 5 per cent. National War Bonds of the first, second, or third series.

The lists opened on 13th June, 1919, and closed on 12th July, 1919. As in the case of past loans, a widespread campaign to popularize the new loan was undertaken by the Government, loyally and unanimously supported by the Press, the banks, and the stockbrokers. The banks and stockbrokers sent out to their customers a copy of the prospectus, accompanied by a strong

letter-appeal from the Chancellor of the Exchequer. The banks publicly advertised that they were prepared to grant loans to enable applicants to subscribe to the Victory Loan, provided the applicants were in a position to pay off the advances within a reasonable time.

The final totals of the subscriptions to the Victory Loan were announced by the Chancellor of the Exchequer on 30th July, 1919, to be as follows—

CASH APPLICATIONS

	£
Funding Loan	287,956,000
Victory Bonds	286,748,000
	574,704,000

of which total, £18,744,250 was paid for in Treasury Bills.

CONVERSIONS

	£
Funding Loan	120,617,000
Victory Bonds	72,203,000
	192,820,000

Cash applications and conversions totalled to £767,524,000.

On the same day, the Chancellor of the Exchequer stated in a written answer that direct subscriptions by banks in their own names had been: Funding Loan, £37,692,000; Victory Bonds, £73,351,000; or a total of about £111,000,000. This creation of further credit by the banks was bad finance, and must inevitably tend to further inflation with all its attendant evils. That such a form of subscription should have been encouraged is remarkable, in view of the statement of the Chancellor of the Exchequer at the time the lists were opened that one of the main objects of the loan was to improve the National Credit. It would have been far preferable that the total of the loan should have been less by £111,000,000. This last creation of credit may in future cost the Government, through indirect means, considerably more than the amount created for the purpose of swelling the total of the loan.

The main reason why the cash subscriptions to the last loan were not considerably greater than they were was that subscriptions to previous loans, after Government disbursement, had mainly gravitated to the accounts of producers, traders, and business men generally. Ordinary depositors of banks had well supported the

earlier loans, and had not had time to build up their deposits again for further subscription to loans. The reason given by business men, when they were asked why they had not subscribed large amounts to the last loan, was generally: " We now require from two to three times as much liquid money to run our businesses as we did before the war, on account of higher prices and increased wages." Thus, the country reaps the evils of inflation through the operation of the vicious circle.

Treasury Bills Outstanding

The following table shows the amount of Treasury Bills outstanding at the end of each year of war and also on 2nd August, 1919—

At	Amount Outstanding.	Annual Increase + or Decrease − during War.
	£	£
August 1, 1914 . .	15,500,000	—
,, 7, 1915 . .	236,322,000	+ 220,822,000
,, 5, 1916 . .	856,557,000	+ 620,235,000
,, 4, 1917 . .	757,977,000	− 98,580,000
,, 3, 1918 . .	1,055,027,000	+ 297,050,000
,, 2, 1919 . .	749,678,000	− 305,349,000

Floating Debt

The floating debt on 2nd August, 1919, amounted to £1,181,255,600. (Outstanding Treasury Bills, £749,678,000 + outstanding temporary advances, £431,577,600.)

Government Borrowings, Revenue, and Expenditure since the Commencement of the War

A table is given on the next page showing the various forms of Government borrowing since the commencement of the war up to 2nd August, 1919. The amounts given under the heading " Receipts " do not represent the actual amounts of the various forms of loans outstanding on 2nd August, 1919, for conversions ; and part redemptions have materially altered many of the amounts since first received. A further £90,000,000 is yet to be received by the Exchequer on account of proceeds of the last Victory Loan.

GOVERNMENT BORROWINGS, REVENUE, AND EXPENDITURE *from 2nd August, 1914, to 2nd August, 1919.*

	Exchequer Receipts. (*2nd Aug.*, 1914–*2nd Aug.*, 1919.) £
3½ per Cent. War Loan, 1925–28 [1]	331,798,408
4½ per Cent. War Loan, 1925–45 [2]	592,479,544
4 per Cent. War Loan, 1929–42, and 5 per Cent. War Loan, 1929–47	948,459,330
4 per Cent. Funding Loan, 1960–1990	202,607,000
4 per Cent. Victory Bonds	181,223,000
3 per Cent. Exchequer Bonds, due 1920 and 1930	60,767,145
5 per Cent. Exchequer Bonds, due 1919, 1920, 1921, 1922 [3]	416,862,035
6 per Cent. Exchequer Bonds, due 1920	161,000,535
National War Bonds due 1922, 1923, 1924, 1925, 1927, 1928, 1929	1,732,597,285
Net increase in Treasury Bills outstanding	733,629,000
War Expenditure Certificates	23,561,000
War Savings Certificates	250,180,000
5 per Cent. U.S.A. Loan (issued Oct., 1915)	50,820,023
Other Debt created under the War Loan Acts, 1914–18 (which includes proceeds of various loans raised in America and one loan in Japan)	1,397,108,058
Temporary Advances (Ways and Means)	431,577,600
	7,514,669,963
Subtract following issues out of Exchequer—	
Exchequer Bonds redeemed under the War Loan Redemption Act, 1910 — 16,395,500	
Issues under Section 1 (5) of the War Loan Act, 1915 — 170,143,313 [4]	
War Loans, Exchequer Bonds, etc., under Finance Acts, 1916 (Section 61) and 1917 (Section 34) — 103,251,305	
War Expenditure Certificates under War Loan Act, 1916 — 23,561,000	
Depreciation Fund under the Finance Act, 1917 — 71,820,602	
Issues under the Civil Contingencies Fund Act, 1919 — 59,000,000	
Excess of Sundry Small Issues over Sundry Small Receipts — 6,430,190	
	450,601,910
Net borrowings for five years ending 2nd Aug., 1919	7,064,068,053
Add Revenue for five years ending 2nd Aug., 1919.	2,967,773,439
	10,031,841,492
Subtract increase in Exchequer Balances	1,288,669
Total declared expenditure for five years ending 2nd Aug., 1919, chargeable against revenue	£10,030,552,823

[1] Through Conversions £62,774,000 in issue on 31st March, 1916.
[2] About £20,000,000 in issue on 4th August, 1917, owing to Conversions.
[3] Repayable at par in October, 1919, at option of holder.
[4] Includes repayments to Bank of England of £160,427,623.

In the following tables, Government Revenue, Borrowings, and Expenditure are shown separately for the eight-month period—2nd August, 1914–31st March, 1915; for the fiscal years ending 31st March, 1916–1919; and, finally, for the four-month period—1st April–2nd August, 1919. This division clearly discloses the rapid increase in war expenditure during the course of the war—

YEAR ENDING 31ST MARCH, 1915

	£		£
Total Expenditure. .	560,473,533	Revenue	226,694,080
Increase in Exchequer Balances	73,016,433	Net Borrowings . .	406,795,886
	£633,489,966		£633,489,966

1ST APRIL–1ST AUGUST, 1914 (PRE-WAR)

	£		£
Total Expenditure .	62,113,553	Revenue	54,935,336
Decrease in Exchequer Balances	5,374,131	Net Borrowings . .	1,804,086
	£56,739,422		£56,739,422

WAR PERIOD

2ND AUGUST, 1914–31ST MARCH, 1915

	£		£
Total Expenditure .	498,359,980	Revenue	171,758,744
Increase in Exchequer Balances . . .	78,390,564	Net Borrowings . .	404,991,800
	£576,750,544		£576,750,544

Daily average of total expenditure, £2,059,000.

Daily average of total expenditure for year ending 31st March, 1914 (pre-war), £541,000.

YEAR ENDING 31ST MARCH, 1916

	£		£
Total Expenditure .	1,559,158,377	Revenue	336,766,824
Decrease in Exchequer Balances . . .	57,875,946	Net Borrowings . .	1,164,515,607
	£1,501,282,431		£1,501,282,431

Daily average of total expenditure, £4,260,000.

YEAR ENDING 31ST MARCH, 1917

	£		£
Total Expenditure .	2,198,112,710	Revenue . . .	573,427,582
Increase in Exchequer Balances . . .	860,853	Net Borrowings . .	1,625,545,981
	£2,198,973,563		£2,198,973,563

Daily average of total expenditure, £6,022,000.

YEAR ENDING 31ST MARCH, 1918

	£		£
Total Expenditure .	2,696,221,405	Revenue	707,234,565
Decrease in Exchequer Balances . . .	5,405,829	Net Borrowings . .	1,983,581,011
	£2,690,815,576		£2,690,815,576

Daily average of total expenditure, £7,387,000.

YEAR ENDING 31ST MARCH, 1919

	£		£
Total Expenditure .	2,579,301,188	Revenue	889,020,825
Decrease in Exchequer Balances . . .	8,230,524	Net Borrowings . .	1,682,049,839
	£2,571,070,664		£2,571,070,664

Daily average of total expenditure, £7,067,000.

On 11th November, 1918, Armistice signed with Germany.

1st April–2nd August, 1919

	£		£
Total Expenditure .	499,399,163	Revenue . . .	289,564,899
Decrease in Exchequer Balances . . .	6,450,449	Net Borrowings . .	203,383,815
	£492,948,714		£492,948,714

Daily average of total expenditure, £4,028,000.

On 28th June, 1919, Germany signed the Peace Terms.

SUMMARY FOR FIVE YEARS

2nd August, 1914–2nd August, 1919

	£		£
Total Expenditure .	10,030,552,823	Revenue . . .	2,967,773,439
Increase in Exchequer Balances . . .	1,288,669	Net Borrowings . .	7,064,068,053
	£10,031,841,492		£10,031,841,492

The expenditure amounts shown in the foregoing tables include loans to Allies and Dominions, stated in the Chancellor's Budget speech (30th April, 1919), to be £1,739,000,000, made up as below—

(Million £'s)

	Advances Aug. 1, 1914 to Mar. 31, 1916.	Advances during Financial Year 1916–17.	Advances during Financial Year 1917–18.	Advances during Financial Year 1918–19.	Total Advances from Aug. 1, 1914 to Mar. 31, 1919.
Dominions .	88	59	47	23	171
Allies . .	288	539	505	236	1,568
Total .	376	598	552	213	1,739

Cost of the War up to 2nd August, 1919

The revised Budget estimate given by the Chancellor of the Exchequer before the war of the expenditure for the fiscal year ending 31st March, 1915, was £207,000,000. Assuming that the

war had not taken place, and that the expenditure since 1914 had increased at the rate it did during the ten years immediately preceding the war, namely, at the rate of £5,000,000 per annum, normal expenditure for the five years ending 2nd August, 1919, would have been about £210,000,000, £215,000,000, £220,000,000, £225,000,000, £230,000,000: total for five years, £1,100,000,000. Subtracting this £1,100,000,000 from the actual expenditure, £10,030,000,000, under war conditions, there is obtained £8,930,000,000 as the cost of the war to the United Kingdom up to 2nd August, 1919, inclusive of loans to Allies and Dominions. Assuming that £930,000,000 is eventually repaid by the Allies and Dominions (about half of the total loans thereto, an assumption made by the Chancellor of the Exchequer on 20th May, 1919), the money cost of the war to the United Kingdom up to 2nd August, 1919, would be about £8,000,000,000. The factor of future sales of Government war stores, etc., is not considered in the calculation of the cost of the war up to 2nd August, 1919, because receipts therefrom will be more than eaten up by further expenditure arising out of the war.

X. Reaping the Inflation Harvest

Monetary inflation may be defined as an increase in the aggregate of the elements constituting the immediate available purchasing power of a community, not accompanied by a proportionate increase in the total supply of available goods and services continuously at the disposal of the community.

The immediate available purchasing power a community possesses under modern conditions of credit is the aggregate of its credit balances at its bankers; promises by bankers of further credit as required; and a relatively small amount of gold, silver, and notes in the hands of the public. Before the war, on 31st December, 1913, this aggregate was roughly £1,588,000,000. Five years and seven months later, on about 1st August, 1919, it was roughly £3,151,000,000, an increase of about £1,563,000,000—or nearly 100 per cent.—as shown by the table appended.

Nature of immediate available purchasing power.	At 31st Dec., 1913.	At about 1st Aug., 1919.
	£	£
Commercial Bank Deposits	1,071,000,000	2,200,000,000[1]
Unused Bank Credit[1]	100,000,000	150,000,000
Savings Bank Deposits	255,000,000	344,000,000
Bank of England: Public Deposits	10,000,000	18,000,000
,, ,, : Other Deposits[2]	61,000,000	117,000,000
Gold in hands of Public[1]	50,000,000	12,000,000[3]
Silver in hands of Public[1]	15,000,000	40,000,000
Bank of England Notes in hands of Public[4]	10,000,000	40,000,000
Scotch Bank Notes in hands of Public	8,000,000	28,000,000
Irish Bank Notes in hands of Public	8,000,000	32,000,000
Currency Notes in hands of Public[5]	—	170,000,000
	£1,588,000,000	£3,151,000,000

[1] Estimated.

[2] To the extent that "Other Deposits" of the Bank of England includes bankers' balances (amount not ascertainable), the above table requires amendment.

[3] Hoarded.

[4] The Note Circulation of the Bank of England at 31st December, 1913, was about £30,000,000; and at 30th July, 1919, about £79,000,000.

[5] Treasury Currency Notes and Currency Note Certificates outstanding on 30th July, 1919, amounted to about £339,000,000. It is estimated that on that date the banks held about £170,000,000 in the form of Currency Notes and Currency Note Certificates.

The item " Unused Bank Credit " is introduced into the above table to show that in an estimate of the available purchasing power of a community, outstanding bank promises of advances to customers, if not already included in the first item, " Commercial Bank Deposits " (balances standing to credit of customers), must be taken into consideration.

The increase in the immediate available purchasing power of the community since 31st December, 1913, may be taken in round figures at £1,500,000,000.

Since the Armistice was signed on 11th November, 1918, the Government and the Press have been busily engaged in pointing out to the public of this country the dangerous financial position of the country arising out of the war, and the economic evils now beginning to disclose themselves as the inevitable result of the past five years' policy of unprecedented monetary inflation. The Government's position is that of a child who has opened the door of a cage containing a vulture. The sweets of liberty being too great a temptation for the bird, it makes use of its wings. When the bird is missing, the child tearfully states to its parents: " I didn't mean the bird to get away. I thought it would stay in its cage until I closed the door again." Each successive Chancellor of the Exchequer has during the war helped to widen that cage door. Now the evil is done, the Government asks all and sundry to help it to cage the vulture once more or to clip its wings. It asks the impossible: the seed has been sown and the harvest must yet be reaped. Its gathering will probably wreck several administrative machines during the coming years.

Reviewing the whole of the Government's financial policy during the war, one is forced to the conclusion that successive Administrations have shown a lamentable ignorance of elementary truths and principles of finance and economics, and of human nature. It is one thing to ignore economic principles when the balloon of inflation is expanding, but when the bursting point comes it is a very different matter to avoid trade being strangled by the strings and folds of the wrecked envelope.

In case this chapter is read by any one who has very little knowledge of the subject of monetary inflation, the following brief and simple account of the growth of the purchasing power of the community during the war, and the evils of such growth, may

be of some use in helping him to understand the subject. As an additional aid to lucidity, the review is given in the form of imaginary questions and replies thereto.

By what methods has the available purchasing power of the community been increased during the war by about £1,500,000,000?—The table that has already been given discloses that the increase in the immediate available purchasing power of the community during the war has been due mainly to increase in bank deposits. It is shown in the chapter of this report entitled "The Banking Position" that the increase in bank deposits during the war has been due mainly to the creation of credit on Government Account, and not at all to excess deposit over withdrawal of legal tender by customers. The banks have, in net effect, credited customers with sums of money due to the latter from the Government, and have received for such crediting a sheaf of interest-bearing securities from the Government. Bank Notes in circulation have increased about £74,000,000, and probably £170,000,000 of Treasury Currency Notes have been absorbed into circulation.

What are the evils of a great expansion in internal purchasing power?—The evils of a great expansion in the immediate available purchasing power of a community are several and of cumulative effect, if not quickly followed by a great increase in the supply of available goods and services for civilian consumption. An increase in the proportion between the immediate available purchasing power and the supply of goods and services at the disposal of a community operates in raising commodity prices through the almost universal desire to satisfy human wants, whether necessaries or not. Individuals with increased purchasing power tend to increase their purchases until their more urgent wants, appetites, or desires are satisfied, and in consequence to force up prices. Manufacturers, producers, and traders with increased purchasing power tend to compete more severely with one another for labour, materials, and finished commodities with the object of increasing their business profits. The war has caused an enormous change in the distribution of the purchasing power of the community, part of which change will be more or less permanent for a considerable number of years. People with fixed incomes or salaries have necessarily had to reduce their consumption of goods and services during the war. Notwithstanding successive increases of wages

during the war, some sections of labour find themselves worse off than before the war owing to a reduction of their real wages. Inflation, therefore, eventually gives rise to growing discontent and labour troubles.

One of the worst evils of inflation is that it considerably reduces the export trade of a country, because of higher cost of production. On account of this factor, the United Kingdom is now in a very perilous position. Before the war, 75 per cent. of its imports consisted of essential food-stuffs and raw materials. It paid for a large part of these by the export of manufactured goods. At present it is doing a certain amount of export trade, but not sufficient to correct the foreign exchange on New York. Moreover, when the present almost world-wide scarcity of finished goods is satisfied, the cost of production in the United Kingdom, if not reduced from its present level, will not permit the country to compete against lesser prices of the United States, Germany, and Japan in foreign and Colonial markets. In this event, unemployment will become rife in the United Kingdom, possibly leading to destruction of property and civil revolution to some degree. High prices under such conditions will remain, for the country will have little to exchange for imports of food-stuffs and raw materials from foreign countries. Thus, inflation which appeared of so little consequence to the Government has all the seeds of disruptive forces within it in the case of a country peculiarly situated like the United Kingdom, dependent for its existence on foreign trade.

Did not the available purchasing power of the community increase before the war?—For the ten-year period immediately before the war, the available purchasing power of the community increased within the country by about £350,000,000, or an average of £35,000,000 per annum.

Under what conditions is an increase in purchasing power not necessarily followed by increased prices?—An increase in the immediate available purchasing power of a community will not tend to cause a permanent higher level of commodity prices if followed in the near future by a *pro rata* increase in the supply of goods. The greater supply of goods tends to prevent a rise in prices, notwithstanding increased purchasing power of certain sections of the community. Expansion in bank credit is not in itself an

economic evil, for bank credit is absolutely essential to modern production. It is pointed out in the banking section that the great economic distinction between the Government in war time and the public in peace time obtaining grants of credit from the banks is that the former uses the grant in order to obtain and consume goods and services for the destructive purposes of war; but the latter in order to increase productive power, and consequently to increase the available supply of goods at the disposal of the community in the future.

How can deflation be henceforth partially effected?—A reduction in the immediate available purchasing power of the community can be effected by the Government paying off Ways and Means Advances, by the banks gradually placing on the market a large part of the Government securities acquired during the war, by increased taxation, by a levy on profits made during the war, and by intensified production without further increases in wages or in profits. Notwithstanding the excess profits tax, it is notorious—and there is evidence available on all hands—that a large section of manufacturers, traders, retailers, and others, have made considerable profits out of the needs of the nation during the war, scarcity of commodities having forced large profits into their hands.

What is the best policy for Labour to adopt in future in its own interests?—The best policy for labour to adopt in the future to accelerate deflation and further its own interests is increased production. For increased production will usually cause a fall in price more than proportionate to that increase. As labour consumes at least 90 per cent. of production, it has everything to gain by intensified output and everything to lose by wilfully diminished production. Capital is only top dog when consumption ever tends to exceed production. The interest on any excess production sent abroad by manufacturers compels, in the long run, cheaper imports of food-stuffs and raw materials, so here again labour must gain in the long run. Labour should educate its children in the elements of economics and strive for a share in profits after capital has received a certain percentage yield and made suitable reserves both for the purposes of the business and for periods of slack employment. Strikes should be avoided, as labour is the chief sufferer and has to make up for the loss in production in the long

run. Under no circumstances should property be destroyed, for it has all to be rebuilt by labour, which might in the general interests of labour be devoted to production of commodities. The factors of production are as essential to labour as they are to capital.

Why has Labour hitherto been so blind to its own interests?—Labour in the United Kingdom has been lamentably blind to its own interests in the past. It has intentionally, through ignorance, restricted production in the belief that the less each member produced, the more work and better pay there would be for all. There are encouraging signs that some of the labour leaders have now awakened to the fallaciousness of this principle. It seems so obvious that the less the quantity of commodities produced, or services rendered, the less must be the quantity available for the consumption of the working classes as a whole. Moreover, as has been abundantly proved during the war, scarcity causes a high level of prices, for those who have money will satisfy their wants and desires, whatever prices be. The adoption of any principle which makes for scarcity plays into the hands of capital.

How may the Government help to undo the evils of the present inflation?—The Government may do much to help the deflation process. Further retrenchment in public expenditure; a levy or increased taxation on abnormal profits made during the war, notwithstanding the payment of Excess Profits Duty; funding of the present floating debt by direct subscriptions from the public and not from the banks; and the institution of a widespread campaign to educate the masses in the elementary principles of production and consumption. In simple language, a leaflet should be sent by post to every household setting forth the fallaciousness of the impression that restricted production benefits the working classes. Children in elementary schools should be taught the principles of economics in preference to acquiring a little knowledge of less important subjects.

Only by such means can the country ever hope to again take a foremost position in international trade and remain a first-class Power. The bulk of the British working classes are to be relied upon to put forth their best efforts, once they understand the necessity and advantage of so doing to themselves and the nation.

In conclusion, one must express the opinion that the country is going to pay a very high price for the inflation effects following the creation of about £1,500,000,000 additional available purchasing power during the war, which, in the main, could have been avoided if the Government had only adopted a saner financial policy during the conduct of the war.

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